

R E T U R N S.

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1882-1883

VACCINATION.

NORWICH PUBLIC VACCINATION STATION.

*Ordered, by The House of Commons, to be Printed,
24 October and 6 November 1882.*

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Under Sec.

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but, Norwich

V A C C I N A T I O N.

RETURN to an Order of the Honourable The House of Commons,
dated 24 October 1882;—for,

COPY “of REPORT to the President of the Local Government Board by the
Inspectors Appointed to Inquire into certain DEATHS and INJURIES alleged
to have been caused by VACCINATION at *Norwich*.”

Local Government Board, }
24 October 1882.

HUGH OWEN,
Assistant Secretary.

(*Mr. Dodson.*)

Ordered, by The House of Commons, to be Printed,
24 October 1882.

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COPY of REPORT to the President of the Local Government Board by the Inspectors Appointed to Inquire into certain DEATHS and INJURIES alleged to have been caused by VACCINATION at *Norwich*.

To the Right Honourable *J. G. Dodson*, M.P., President of the Local Government Board.

Sir,

IN accordance with your instructions of the 12th of August 1882, we held an official inquiry at the Board Room of the Norwich Union into the complaint of Mr. Lee Bliss as to the alleged deaths and injuries of certain children who were vaccinated in June last at the Public Station in Norwich by Dr. Guy, the Public Vaccinator for the Norwich Union.

We commenced the inquiry upon the 23rd August, and concluded it upon the 4th September 1882.

We annex (pp. 12-53) a copy of the depositions taken before us, together with our Report.

The complainants were represented by Mr. Corrie Grant, instructed by Messrs. Tillett, Solicitors.

The Guardians had retained the services of Mr. Blofield, who was present on the first day of the inquiry, and were subsequently represented by their clerk, Mr. J. Cross.

The Public Vaccinator was represented by Mr. J. C. Chittock, Solicitor, of Norwich.

The chairman, vice-chairman, and others of the guardians were present at the inquiry.

The eight cases first submitted to the Board, namely, Percy William Threadkill (No. 80 *), Emma Tyler (No. 83 *), Alice Lambert (No. 41 *), Maudie Colison (No. 71 *), Jacob Harvey (No. 82 *), May Brown (No. 91 *), Laura Girling (No. 92 *), and Henry Willsea (No. 85 *), were taken in their order.

The two supplemental cases, of Clara Worrell (No. 153 *), and Robert Warnes Balls (No. 497 *), were then investigated. The last case (that of Balls), not having arisen in connection with vaccination, was, by consent, withdrawn. (*See Extract from Death Register, p. 59.*)

In four out of the above nine cases, namely, Threadkill, Tyler, Lambert, and Colison, fatal results had followed.

We propose to deal in the first instance with these four fatal cases.

These four children were all vaccinated by Dr. Guy at the Public Vaccination Station in Norwich; Lambert on the 6th of June, the other three on the 13th.

Percy Threadkill died on 25th June, of "erysipelas," certified by William Guy, M.D.

Emma Tyler died on 26th June, of "erysipelas from vaccination," certified by John Crook, M.R.C.S.

Alice Lambert died on 26th June, of "erysipelas," certified by William Guy, M.D.

Maudie Colison died on 4th July, of "bronchitis," certified by William Guy, M.D.

[*See Extracts from Registers of Deaths annexed, pp. 58, 59.*]

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* These numbers refer to the consecutive numeration of the cases as entered in the Public Vaccinator's Register.

(Although the death of the last-named infant is certified to have been caused by bronchitis, it was admitted by Dr. Guy, after hearing the evidence of other witnesses, that she must have been suffering at the time of death from erysipelas.)

These four children appear all to have been healthy before vaccination, and no evidence was produced to account for their illness from external causes. They came from different parts of the city, and no probable cause of the disease could be assigned, either from the state of health of their parents or of those with whom they had intercourse, or from the state of their dwellings or their surroundings. Attendance at the public station was the only condition common to all four cases. We shall have, therefore, to give especial consideration (below) to the circumstances that occurred at the public station on the days when these children were present.

Examining these cases individually, we find that *Percy Threadkill* (No. 80), a strong and healthy child, was vaccinated by Dr. Guy in the morning of the 13th of June with lymph taken on ivory points from the arm of *Percy Armes* (No. 44), and within a very short period, probably two hours, after its vaccination, showed symptoms of illness which ripened into malignant erysipelas, and terminated in death on the 25th of June, 12 days after vaccination. The vaccination itself was successful, but the character of the vaccine vesicles was not normal.

It was suggested by Dr. Guy, who attended the child at its home, that a rag soaked in castor oil,* or a bread poultice, which the mother had applied to the arm, might have exercised a "pernicious" effect. We may, however, at once set aside this theory, as the child was evidently sickening before any local applications were used; and, having regard to the nearly simultaneous occurrence of the same disease in other children having nothing in common except the circumstances of vaccination, we can only attribute its ailment and subsequent death to illness contracted at the vaccination station.

Evidence was brought forward by Dr. Guy to show that an elder child of Mrs. Threadkill had sores on her face, and Mrs. Threadkill admitted that the girl frequently kissed the baby. It appeared to be suggested that the baby's erysipelas might have arisen from this cause; but we found no reason to think that the sores on this girl's face were of an erysipelatous nature previous to the appearance of erysipelas in the infant.

The case of *Emma Tyler* (No. 83), vaccinated from *Armes* (No. 44), on the same day and in the same way with ivory points, was almost identical in its symptoms with that of Threadkill, though in Tyler the vaccination proved abortive, and the erysipelas was not so speedily developed, the mother not observing anything wrong with the child till between 7 and 8 o'clock the same evening.

This infant was attended in its illness by Dr. Guy and by Mr. Crook, and died on the 26th of June, the day after the death of Percy Threadkill.

Mr. Crook, who has practised for more than 40 years at Norwich, in describing the illness said, "I examined the arm. There was an erysipelatous appearance of the left arm extending from the vaccination marks up to the shoulder and down to the elbow, arising apparently from vaccination. In my opinion the erysipelatous appearance arose from no blame either in the vaccinator or in the vaccinifer." "I have never seen such a bad case of erysipelas before or so soon after vaccination." Having given a certificate of death from "erysipelas from vaccination," he stated in his evidence that "this certificate still represents my opinion."

Mr. Crook added "I do not think there would have been erysipelas if the child had not been vaccinated," and, questioned as to the scratch alone causing erysipelas, he said "If the child's arm had been scratched by a piece of glass, I do not think it would have produced the effect in this case nor so quickly."

It appears then that the two infants, Threadkill (No. 80), and Tyler (No. 83), healthy on the morning of 13th June, were taken to the station about 10 o'clock that morning and were vaccinated with points charged with lymph from *Percy Armes* (No. 44), and that soon after the operation they began to sicken with erysipelas,

* The bottle containing the last drop of this castor oil was obtained and submitted to Dr. Klein, who, with the greatest care, tested it by means of experimental inoculations, but with purely negative results. We annex Dr. Klein's report, p. 64.

erysipelas, and died of that disease, from no apparent cause except something connected with vaccination. It also appears from the vaccination register (*see* extract, annexed) that two other children, Coan (No. 81) and Harvey (No. 82), were, with Tyler (No. 83), the only unsuccessful cases of vaccination out of a total of 33 children vaccinated on that day.

Thus in all the four children who were ostensibly vaccinated from Armes, vaccination was either unsuccessful or was attended by erysipelas. The significance of this fact will be considered below.

We now pass on to the other two fatal cases of Lambert (No. 41) and Colison (No. 71). *Alice Lambert* (No. 41) was vaccinated on the 6th of June, and was taken to the station on the 13th for inspection. The child was then quite well, and lymph was taken from its arm, on points. It sickened upon the 15th, and died of erysipelas on 26th June. It was attended by Dr. Guy, who gave a certificate of death from "erysipelas."

The disease appears to have been of much the same type in this as in the former cases; but, as it did not commence till nine days after vaccination, the act of infection (which, if we have regard to the entire history of the outbreak, we must assume to have taken place at the station) probably occurred not on the day of vaccination, 6th June, but on the day of inspection, 13th June, when the vaccine vesicles were opened. The period of incubation, if reckoned from the date of vaccination, would be far beyond that mentioned by Mr. Netten Radcliffe in his Report to the Board on certain cases of erysipelas, following upon vaccination, in the Misterton District of the Gainsborough Union (p. 14).

"In all instances within my knowledge in which erysipelas after vaccination has been the direct result of inoculation with active septic material or with the infective products of inflammation, the symptoms of the erysipelas or other septic infection have manifested themselves sometimes immediately, and always within a very short time, as one, two, three, or four days, of the performance of the vaccination, and have materially modified, if they have not altogether impeded, the progress of the vaccine vesicle."

It may be mentioned that Mrs. Lambert attributed her child's illness to a cold, caught through exposure at the door when the baby was in charge of an elder girl.

The vaccinifer for Lambert's vaccination was Alice Sewell (No. 28). In consequence of some doubt as to the character of an eruption upon this child, we deemed it our duty to order a special medical examination, by which it appeared that the disease was one common to children at this period of life, and was not specific. (*See* page 31.)

Five other children had been vaccinated from the same vaccinifer (Sewell) without injurious results, one of the five being Percy Armes (No. 44), the vaccinifer in the two previous cases of Threadkill and Tyler.

We find, moreover, that a child named Edith Johnson (No. 97) was on 13th June vaccinated from Lambert's arm, without any injurious result. This fact gives additional ground for believing that Lambert had not contracted the disease previous to the day of inspection.

The case of *Maudie Colison* (No. 71) in some respects resembles that of Lambert. The child was vaccinated on 13th June, and was taken ill on 21st June, the day after inspection. It was attended (once only) by Dr. Guy, who, although he gave a certificate of death from "Bronchitis," admitted, after hearing the evidence, that the child must at the same time have been suffering from erysipelas.

No evidence was given in this case to throw light upon the origin of the disease; but, if caused by something that occurred at the vaccination station, it should probably be referred, like Lambert's case, and for the same reason, not to the day of vaccination but to the day of inspection; and it must be borne in mind, in reference to this case, that for several days previous to 20th June Dr. Guy had been personally attending Threadkill and Tyler and Lambert who were suffering from erysipelas. It is also known that on the 20th the child Girling was present at the station with erysipelas.

In Colison's case, as in Lambert's, Dr. Guy opened the vesicles on the day of inspection, 20th June, and charged some points, with one or more of which he vaccinated a child named Byles (No. 104). In Byles, the vaccination followed a normal course.

The remaining five cases were less severe than the four above described.

Jacob Harvey (No. 82) had an attack of eczema four or five days after unsuccessful vaccination. Mr. Lyddon attended the child; he said the disease was common among children who had not been vaccinated, and that it might be attributed to many causes, such as over-crowding, bad food, bad air, or small scratches; it was not cognate with erysipelas; it was often the consequence of vaccination, but in this case he did not connect it with vaccination, because the vaccination had not taken.

Harvey was unsuccessfully vaccinated from Percy Armes (No. 44), the vaccinifer in the two first (fatal) cases, and that is the fact of chief importance in this case.

May Brown (No. 91), vaccinated on 13th June at the public station, with lymph from Ellen Wicks (No. 45), was taken ill with severe inflammation of the vaccinated arm about a week after inspection. The vesicles had been opened by Dr. Guy on the day of inspection, 20th June, and five or six points charged with the lymph, but there is no record of any of these points having been used for the vaccination of any other child. Mr. Lyddon attended the child Brown, and stated it to be a case of "erythema after vaccination." He said he repeatedly had cases of erythema in his own practice, but generally they were not quite so severe. The illness had resulted in no permanent injury to the child. Supposing it to have been of an erysipelalous nature, the disease appeared to be referable to the day of inspection, 20th June. We have already, in speaking of Colison's case, mentioned two possible sources of infection present at the station on that day.

Laura Girling (No. 92), was vaccinated, like May Brown, from Ellen Wicks (No. 45), on 13th June. On the next day the mother noticed that the child "looked sadly; was not so sprightly as before." The illness developed on the following Friday, three days after vaccination, into erysipelas, which remained confined to the vaccinated arm. The child was attended by Dr. Guy and Mr. Matthews. It recovered, and is now well, and the disease, in Dr. Guy's opinion, is not likely to recur. No cause but something connected with vaccination could be assigned for this attack of erysipelas.

Besides Brown and Girling, five other children were vaccinated from the same vaccinifer (Wicks), without injury.

Henry Willsea (No. 85), was vaccinated from Charles Davison (No. 51) on 13th June, and was taken ill on 21st June, the day after inspection. The left leg swelled and gathered, and afterwards the right wrist. The child was attended by Dr. Guy, who said it suffered from abscesses, not due to erysipelas. Dr. Guy does not consider that any permanent injury will arise. The child was produced before us, and was not even at that date quite cured. No cause could be assigned for this attack, but assuming it to have been erysipelas (of phlegmonous character) it might be traceable, as suggested in Colison's case, to infection from Girling or from Dr. Guy himself.

Six other children were vaccinated from the same vaccinifer (Davison), without injury.

Clara Worrell (No. 153) was vaccinated from Lily Newman (No. 106), on 27th June. The mother noticed nothing the matter with the child till five days after inspection, when "spots came out on the back of the neck, and also on the eyelid." A week later the vaccinated arm became inflamed. Dr. Guy attended the child, and said the arm was generally inflamed and erysipelalous. The child was also seen, when recovering, by Mr. Allen, surgeon, of Norwich. It made a good recovery. No cause could be assigned for this illness, but it should be noted that on the day when this child was taken to the station for inspection (4th July), the child, May Brown, suffering, as Mr. Lyddon stated, from erythema, was also present.

Two other children were vaccinated from the same vaccinifer (L. Newman), without injury.

This closes the list of cases upon which we are reporting, and we have now to indicate such considerations as appear to us to arise from the evidence of the witnesses examined before us.

With regard to the general administration of the Vaccination Acts in Norwich, we find that no charge is brought against the Guardians, who are the body entrusted by the Legislature with that duty, and there was no evidence of any negligence on their part.

Incidentally

Incidentally the question came before us of the suitability of the present vaccination station. One witness stated that the waiting-room was crowded, and we learnt that occasionally some of the women and infants had to be accommodated in a private room upstairs, to relieve the pressure in the waiting-rooms below.

Knowing the difficulty the Guardians have in finding a public room suitable for the purpose, and seeing the advantages of central position and general convenience attaching to the present station, which is at the private residence of the public vaccinator, Dr. Guy, we are disposed to think that the circumstances of the case would best be met by appointing two attendances in every week, instead of one, for the performance of public vaccination. The pressure at the station would thus be relieved; there would be less delay to the women, less risk of infection to the infants, and less confusion to the public vaccinator.

With regard to the mode in which the public vaccinator had performed his public duties, no charge was brought against him by the complainants, nor did it appear, in spite of confused admissions on his part, under a very severe examination by the counsel engaged on behalf of the complainants, that he had failed in carefulness or skill in the performance of his duty.

We think, however, that objection should be made to Dr. Guy's practice of using again and again the same ivory points in transferring lymph from arm to arm, for though it was stated that the same points were not used twice in the same day, and that after every day's using they were carefully cleaned, yet it is evident that some risk of septic contamination attaches to the practice; and we would repeat the recommendation which has before been given to Dr. Guy by the Board's Medical Inspector, when inspecting the work at the station, that he should discontinue the use of ivory points in his ordinary public vaccinations.

It might even be suggested that some of the points which were used on 13th June had by some accident or neglect become affected with a septic taint, which made them capable of causing erysipelas in children to whose abraded arms they were applied. But we find difficulty in understanding how, on this hypothesis, it could happen that the vaccinifer, Percy Armes (No. 44), should escape being infected by the points applied so many times to its opened vesicles, while two out of four children vaccinated with those points caught malignant erysipelas, or how it could happen that Lambert's child should be infected in the act of taking its lymph, while the child Johnson, vaccinated from it, escaped, or how Girling should be infected while Ellen Wicks (the vaccinifer) escaped.

The vaccinifers, from whose arms lymph was taken for the nine vaccinations under inquiry, were proved to have been then and (with the exception of Sewell, *see* page 5), since, in apparently good health, with good properly-formed vaccine vesicles on the day of inspection. No blame is cast upon the vaccinator in respect of the selection of any of these vaccinifers.

The chief facts relating to the source and pedigree of the lymph used in the vaccination of the nine children in question are given in a table appended to this Report (*see* page 66), on the authority of the vaccinator's register, by which it appears that the nine children were vaccinated from six different sources; that these six vaccinifers had themselves been vaccinated from four different sources; these four are traced back to two different sources on 23rd May; and, lastly, these two to one child, who had been vaccinated on 16th May, about a month before the occurrences which form the subject of this inquiry.

Lambert was one of six children vaccinated from Sewell (No. 28); Colison was one of three vaccinated from Marriott (No. 54); Brown and Girling were two of seven vaccinated from Wicks (No. 45); Willsea was one of seven vaccinated from Davison (No. 51); Worrell was one of three vaccinated from L. Newman (No. 106.) There was no evidence of any ill result having arisen in the other 20 children vaccinated from these five sources. To these five vaccinifers at least there can attach no suspicion of having caused the illness of the six children above named.

Lastly, as to the vaccinifer Percy Armes (No. 44). Four children are registered as having been vaccinated from Armes, namely: Threadkill (No. 80), Coan (No. 81), Harvey (No. 82), and Tyler (No. 83). Threadkill and Tyler contracted erysipelas. In Coan and Harvey, and also in Tyler, the vaccination proved unsuccessful.

The evidence of Mrs. Armes, the mother (who produced the child before us), supported by that of Dr. Guy, proved that the infant had always been in

apparently good health. The vaccination ran the usual course, and upon the day of inspection Dr. Guy remarked to the mother, "What a nice arm your child has!" The child has been quite well ever since.

We therefore conclude that the child, Armes, was to all appearance a fit subject to be selected and used as a vaccinifer.

This is the only case in which the abnormal results of the vaccinations appear at first sight to inculcate the lymph. To this point we shall presently return.

Dr. Guy himself appears to have been not without suspicion as regards the vaccinifer, for he went to the house of Mrs. Armes to see her child; and it was deposed by two witnesses that he made use of an expression with regard to the state of health of the mother of the vaccinifer during her pregnancy, though he denied having used the words attributed to him.

That Dr. Guy was fully aware of the gravity of the occurrence appears from his remark to Mrs. Tyler, that he "would not have had it happen for a thousand pounds;" and also from the fact that he attended Tyler's and Threadkill's children gratuitously till their death, and gave a contribution through his wife towards the funeral expenses of the latter.

The question arises whether Dr. Guy, when he found on the 13th and 14th of June that there were at least three severe cases of erysipelas among children whom he had recently vaccinated, should not have felt it his duty at once to close the station and suspend public vaccination until he could feel satisfied that the danger of secondary infection had passed away. This would doubtless have been the proper course to take, in order to guard against extension of the disease; but we have to bear in mind that no similar case had occurred in Dr. Guy's previous experience during more than nine years; that it would be no light matter to disappoint the large number of persons who would present themselves at the station in the following week, to throw the work of the vaccination officer into arrear, and to stop the course of arm-to-arm vaccination; and that Dr. Guy might well think that if those who were first taken ill were kept away from the station, no subsequent harm to others was likely to arise.

We think that in continuing to attend the sick children at their own homes Dr. Guy may have incurred some risk of becoming himself a transporter of infection to others. It may be thought that Dr. Guy would have done better, having regard to his public duties, to have erred rather on the side of caution and to have abstained altogether from visiting these cases. We cannot ignore the possibility that some of the later cases of erysipelas may have been due to infection brought by Dr. Guy from the bedside of one or another of the earlier cases that he was attending. But we cannot condemn a course of action which we believe to have been prompted by a feeling of humanity as well as a sense of responsibility.

It must be observed that the occasion was altogether an exceptional one, and one for which Dr. Guy was wholly unprepared by anything that had occurred in his previous experience, and we feel that under the urgent and alarming circumstances of the case it is not to be wondered at that his action should have been less circumspect than might have been desired.

Returning now to the question, what was the actual cause of the erysipelas from which most of these children suffered, and of which some of them died, we remark that very little evidence of a positive character bearing upon this question was brought before us at the inquiry, and we are left practically to an examination of the vaccination register, and a discussion of the entries which it contains, as the principal means to enable us to form an opinion on the matter.

For this purpose we feel justified in taking the order of the entries in the register as representing the order in which the children were vaccinated. (*See* extract from the vaccination register, annexed, pp. 60-63.)

Referring to the vaccination register for 6th, 13th, and 20th June, the first name that we meet with, of those who suffered, is Lambert (No. 41); but this child, though vaccinated on 6th June, was not taken ill till after inspection on 13th June. Probably, therefore (as already mentioned), this child's illness was contracted on the day of inspection, 13th June, when lymph was taken from its arm to vaccinate Edith Johnson (No. 97.) Now Johnson's name appears in the register near the end of the list of vaccinations on 13th June. Therefore, we may suppose that Lambert's infection took place nearly at the close of the sitting

sitting on that day, and therefore subsequent to the vaccination of Threadkill, Tyler, and others, which took place (according to the register) about the middle of the sitting.

The next name, in the register, of those who suffered is Colison (No. 71). Colison was vaccinated early in the sitting on 13th June, but the illness in this case (as already described) cannot be referred to the day of vaccination, but probably arose from something that occurred on the day of inspection, 20th June, when lymph was taken from the arm.

Both these cases (Lambert and Colison) therefore have to be referred, in reading the chronology of the outbreak, to dates a week later than the dates of their vaccination; and we then perceive that the earliest moment to which the outbreak of erysipelas can be referred coincides with the vaccination of the child Threadkill (No. 80) from the arm of Percy Armes (No. 44.) Up to that moment no mischief had been done. Thirteen children had been already vaccinated that morning who took no harm from the vaccination. Then come the four children that were vaccinated from Percy Armes. Two of them are attacked with erysipelas the same evening and die within a fortnight; in the other two the vaccination is wholly unsuccessful. It cannot be doubted that at that moment some poisonous agency came newly into play at the station. We cannot divest our minds of the strong impression that the lymph used in vaccinating those children must have carried with it the elements of the disease which they subsequently developed.

We have considered the hypothesis that some person, possibly the mother of one of the children concerned, entering the station at that moment, may have brought with her, unawares, the infection of erysipelas; but we fail to perceive how, on this hypothesis, we are to account for the conspicuous failure of the vaccination with this particular lymph.

That three out of these four vaccinations should have failed, in the hands of a uniformly successful operator, appears to us to betoken almost necessarily some abnormal peculiarity or contamination of the lymph. But we cannot dissociate the failure of the vaccination in the three cases (Coan, Harvey, and Tyler), from the occurrence of erysipelas in the two cases (Threadkill and Tyler), and suppose that these different results were due to two concurrent but wholly distinct causes. It is known, as appears from the words above quoted (page 5) from Mr. Netten Radcliffe's Misterton report, that the same cause which can produce erysipelas can also altogether impede the progress of the vaccine vesicle.

We feel justified in believing that the failure of the vaccination in some of the children vaccinated from Armes, and the production of erysipelas in others, were both due to the same cause, namely, some abnormal peculiarity or contamination of the lymph.

We have already stated (on page 7) the reason why we do not regard the state of the ivory points as the probable cause of the mischief. The evidence before us furnishes no other clue. Believing the child Armes to have been healthy, and believing the uncontaminated lymph of a healthy child to be innocuous, we can only conclude that the outbreak was due to some contamination of the lymph which has escaped detection.

An opinion was put forward at the inquiry, that pure lymph taken from a healthy child and inserted in the arm of another healthy child might of itself cause erysipelas in the latter. We cannot entertain this opinion, in view of the habitual absence of erysipelas from the practice of vaccination. We conceive that if this opinion were well-grounded, erysipelas would habitually show itself in a sporadic manner at a station so largely frequented as that of Norwich. But the outburst of erysipelas with which we are concerned displays an epidemic and exceptional character which plainly negatives any theory that would make it depend upon the habitual operation of an ever-present cause.

We have here been dealing with the earliest group of cases. As regards the others, it appears that Lambert's illness, and also Girling's may probably be referred to the 13th of June, as the day when the infection was contracted. These two children appear by the register to have been present at the station at a later period of the sitting than the group that were vaccinated from Armes. In these later cases the illness was probably due, in some way which we cannot trace, to the same cause that had operated in the earlier cases on this day, 13th June.

Subsequently there was a group of cases (Colison, Willsea, and Brown) in which the illness was referable to 20th June. It is in relation to these cases that we have already spoken of Dr. Guy's personal attendance on Threadkill, Tyler, and Lambert. It seems possible that he may thus have communicated the infection to the later group on 20th June. Also on that day the child Girling was brought to the station suffering with erysipelas. Here we see another possible source whence the later group may have derived infection.

Lastly, there is the case of the child Worrell, vaccinated on 27th June, inspected on 4th July, taken ill on 9th July. It may be suspected in this case that the infection, if caught at the station, was caught on 4th July, possibly from the child Brown (No. 91), who was present at the station on that day suffering with severe inflammation of the arm.

Before leaving the question of the origin of this outbreak of erysipelas, we would refer to the evidence that was given as to there being any epidemic prevalence of erysipelas in Norwich at the time.

Dr. Guy had not recently had any case of erysipelas before 13th June.

Mr. Richardson, one of the district medical officers of the city, having in his district a population of 9,864, and also one of the medical officers of the Norwich dispensary, said "I think there has been rather more erysipelas in the city than usual in the last eight months. In my practice it has occurred in isolated cases, not groups. Roughly, eight cases pretty equally distributed over the eight months. They were not connected, but eight isolated cases. So far as I know, there has been nothing that could be described as an epidemic of erysipelas in Norwich."

Mr. Crook had had no cases of erysipelas in his practice since February 1882.

Mr. Lyddon said, "My institute practice is principally amongst artizan classes. There are about 5,000 or 6,000 men, and their wives and children, representing about 10,000 or 11,000 persons. During last June there was more than the usual number of erysipelas cases. I should not think they were epidemical. I should say there were about half-a-dozen cases dotted about Norwich."

Mr. Allen had no cases of erysipelas in June or July last.

Mr. Matthews, an unregistered and not fully qualified practitioner, said, "I have been consulted by women with vaccinated children in about nine or 10 cases, from the city, in the last 12 months. Generally they were bad cases of erysipelas."

As far as this evidence goes, it gives reason to think that erysipelas was present in Norwich in greater amount than usual, though not to the extent of an epidemic; and so far it lends support to the suggestion that the infection might have been accidentally introduced into the vaccination station.

There appears to be nothing of any significance in the meteorological records for the week preceding the outbreak. (*See extract annexed, p. 57.*)

Before concluding this Report, we would again draw attention to what appears to us the very noteworthy fact, that during the nine and a-half years that Dr. Guy has been public vaccinator to the city of Norwich, vaccinating annually about 1,200 children, there has never up to the present time been any public complaint of injury having arisen to any of the 10,000 children he has vaccinated. In this fact we see good ground to feel generally satisfied with the existing practice; and while we deplore the disastrous occurrence into which it has been our painful duty to inquire, we are yet happy to think that such an occurrence is of extreme rarity. It is no new discovery that there is a certain risk attending vaccination, but that risk is shown, by the figures here given, to be very small.

We have finally to consider to what extent the complaint of Mr. Lee Bliss, "that eight cases of death and injury had resulted after the children in question had been vaccinated by the public vaccinator of this city," has been substantiated.

As regards the several children in question; we find that Percy William Threadkill and Emma Tyler were vaccinated at the public station on the 13th of June, and then and there contracted an illness (erysipelas) which caused their deaths on the 25th and 26th of June respectively; and although we are unable to assign with certainty a specific source of infection, the evidence raises a strong case of suspicion against the freedom from contamination of the lymph with which they were vaccinated.

With

With regard to the case of Alice Lambert, who was vaccinated on 6th June, and died on 26th June, and also with regard to Laura Girling, who recovered, we believe that the disease (erysipelas) was contracted at the station on 13th June, but no evidence was adduced that served to indicate the probable source of infection.

Maudie Colison, vaccinated on 13th June, died on 4th July, having probably contracted erysipelas on the day of inspection, 20th June. In the absence of any more direct evidence as to the transmission of the infection, we cannot ignore the possibility of the erysipelas having been communicated by the public vaccinator, who had shortly before attended Threadkill, Tyler, and Lambert, or by the child Girling, who was present at the station on the 20th.

Jacob Harvey, after unsuccessful vaccination on 13th June, suffered from eczema. The medical evidence appeared insufficient to determine whether the eczema was caused by the attempted vaccination or not.

May Brown suffered from erythema, hardly, if at all, distinguishable from erysipelas, probably contracted at the vaccination station on 20th June, and possibly due to one of the causes above suggested in Colison's case. No permanent injury has resulted.

Henry Willsea suffered from abscesses, probably the result of phlegmonous erysipelas, which might have been contracted at the vaccination station on 20th June, under the same circumstances as in the cases of Colison and Brown.

Clara Worrell suffered from erysipelas of the vaccinated arm, and recovered. The evidence was insufficient to warrant a conclusion as to the cause of the disease, but it may be suspected to have been due to the presence of the child Brown, with an inflamed arm, at the station on 4th July, the day of Worrell's inspection.

Lastly, we find that no blame was proved to attach to the Public Vaccinator as regards the performance of his duties at the station, or to the appliances at the station itself; but we think that the Public Vaccinator should discontinue the practice of using again and again the same ivory points, and we consider that it was an error of judgment on his part to continue the vaccination attendances while he was daily visiting the first three cases of erysipelas at their own homes, without taking more than ordinary precautions to guard against the spread of infection.

We also think that steps should be taken to relieve the crowding at the vaccination station.

We cannot close this Report without expressing our thanks to the different persons present at the inquiry, who without distinction afforded us every assistance in our endeavours to arrive at the truth.

We have, &c.

(signed)

J. J. Henley, General Inspector.

Hubert Airy, Medical Inspector.

21 October 1882.

D E P O S I T I O N S.

23rd AUGUST 1882.

DEPOSITIONS taken on Oath before us, *Joseph John Henley* and *Hubert Airy*, Esquires, Local Government Board Inspectors, at the Board Room of the Norwich Union Workhouse, this Twenty-third day of August 1882.

THREADKILL'S CASE.

WILLIAM BACON, Messenger, says:—

I SERVED a summons upon Mrs. Threadkill on Saturday evening last, about 11 o'clock, at her house.

WILLIAM GUY says:—

I am public vaccinator for the borough of Norwich. I vaccinated the child of Mrs. Threadkill on 13th of June last. I examined the child before vaccinating it; it appeared to be healthy; no eruptions on it. The child was not brought to me for examination the following week. I saw the child a few days afterwards at my surgery; the arm of the child was erythematous, and the hand was swollen on the arm vaccinated. I treated the child for this, and saw it again several times at the house; it was then suffering from erysipelas. I can't tell the dates, but it was during the week; the erysipelas extended from the chest down the right arm. I attended the child up to its death; it spread down its right leg before death. (*Certificate of death from erysipelas put in*). The lymph used in this case was taken from the arm of a child named Percy Armes. The number of this case is 80 on my register; that of Percy Armes, 44. Percy Armes was healthy when I took the lymph from his arm on the 13th of June; I saw him again about the 17th of June; this, I think, was before the death of Threadkill on the 25th of June; I took lymph from his arm for other cases on the 13th of June. Herbert Coan, Jacob Harvey, Emma Tyler; the case of Herbert Coan was unsuccessful. I have since successfully vaccinated this child on the 18th of July last. Jacob Harvey's case was unsuccessful, and I postponed it; it was brought up on the 20th of June; the child at that time did not look well, and therefore I postponed the vaccination; the child was weak; on the 13th of June it was perfectly well; on the 20th it did not look so well as it did the week before. I did not postpone the vaccination of any other children on that day. On the 13th of June there were 33 children at the station who were vaccinated, and on the 20th of June there were two unsuccessful cases, and both of these cases were taken from Armes' child. Tyler's child was also unsuccessful; it does not appear on the register, as the case was not brought up. In vaccinating these cases I used a lancet, and only the lancet to the best of my recollection. On the 20th of June I did not notice a symptom of erysipelas about any of the cases. I painted the arm of the child Threadkill with a solution of nitrate of silver, and covered the arm with medicated wool; I bought this wool at a chemist's.

Cross-examined by Mr. *Corrie Grant*.] I am an M.D. of Edinburgh, and a M.R.C.S. of London. I am speaking of the whole of this case from memory; I took no notes, unfortunately. I have been a public vaccinator for nine years at Norwich, and 18 for Thorpe. During that period (nine years) the number vaccinated have been about 1,100 a year. I have thoroughly studied the vaccination question, and have read a good deal about it. I am not acquainted with the Gainsboro' cases. My register is entered up at the time the children are brought to me. I do not make notes of the cases. There is always swelling after vaccination; but I do not consider it necessary to make notes as a public vaccinator. I attended Threadkill as a private patient; I did not intend to charge for my subsequent attendance. In such cases I do not consider it necessary to make notes; they are of no assistance to me in such cases; doing so would not be superfluous; they would, I presume, be of some assistance. On the 13th of June I looked at the child to see if it had thrush; I did not have the child stripped; I did not look for anything but thrush. The skin was clear. I did not examine behind the ears for eczema. I did not examine the whole of the skin; the child's arms and neck were bare; this was the extent of my examination. Erysipelas first shows itself as erythema, and vesicles formed; it would first show itself in the neighbourhood of a scratch, but I did not examine Armes' child as to this. I am acquainted with the instructions of the Local Government Board as to vaccination; I consider I complied with them in this case. On the 13th of June

last

last I believe erysipelas was epidemic in Norwich; I heard this since that date. I believe Mr. Lyddon told me; he said he had a case of erysipelas. Dr. Airy told me last Friday week there were cases of erysipelas; I have also heard of isolated cases. From what I heard I considered there were two or three cases in Norwich at the end of June. I believe there was a slight epidemic of erysipelas; it was prevalent after the 20th June. I still continue to vaccinate. The child of Threadkill was brought to me on the 13th of June last by Mrs. Threadkill. I made an examination of this child on the 13th of June, but I cannot say how. I have made no alteration in my system of vaccination since that date and the present time. I am not making a more careful examination of the case. When a child is brought to me for vaccination, I ask if it is healthy, whether it has got thrush; nothing else. I frequently ask whether it has a skin disease. I do not inquire what locality the child comes from; that is entered in the book by the vaccination officer; I do not then see the book. I sometimes ask, but not often, if the father is a healthy man. I see the mother, and sometimes ask her if she is in good health. I do not ask her whether she has had miscarriages; it never struck me as being important; I do not think it is. I make inquiries of the parents of a child from whom I am going to take the lymph. I make an examination of the cases when they are brought up; I ask whether the father has had skin disease, and whether he is healthy; I do not explain to them what I mean by skin disease, nor do I ask where he comes from, nor whether any disease prevails in his neighbourhood. I inquire whether the mother is healthy; if she is absent, I inquire as to the health of the mother, and why she did not come. I do not inquire how many children she has had, or whether she has had a previous miscarriage. I am not aware that a miscarriage may be a sign of vaccinal syphilis. I have read portions of Dr. Erichsen's book on Vaccination; my impression is now that I have not read it. I am not acquainted with Dr. Lee's or Dr. Hutchinson's books on Syphilis. I cannot say what general reading I have made on the subject. The examination I make when a child is presented to me for vaccination is not to have them stripped. I look at the legs, and look at them generally. I turn up the legs and look behind the knee, and I frequently look at the nates. I frequently look behind the ears; I do nothing more. I do not examine for irritation of the bowels, or for signs of fever; I do examine for eczema, but not specially. If I complied with the instructions of the Local Government Board, I ought to have the children stripped, and this is the only exception. I wish to withdraw my answer with respect to examining a child for fever; I now say I do examine the child for fever by an examination of the pulse, the mouth, and the skin; I do not take the temperature; I consider it the best test of fever. I do not employ the thermometer; it would occupy five minutes in each case; I do not employ it in private cases of vaccination. I consider that I comply generally, but not specifically, with the requirements of the orders of the Local Government Board; I will, however, in future endeavour to be more careful. I have received rewards from the Local Government Board for efficient vaccination; in 1874 it was, I believe, 66 l. 5 s. for Norwich; the second was in 1880; I think it was 122 l. 3 s. awarded to me by Dr. Airy. The cases vaccinated by me have, I believe, been properly performed. I consider my vaccinations efficient vaccinations, though perhaps not entirely in accordance with the instructions of the Local Government Board. (*Extract from "Instructions to Public Vaccinators" read*). With respect to the child of Threadkill, the history of lymph is that the child was vaccinated from the arm of Percy Armes, and Armes from Alice Sewell, Sewell from Maude Tooke, Tooke from Sidney Beales, and Beales from Caroline Tubbey. In all these cases the lymph was from arm to arm with the lancet. In some cases we take the lymph on dry points, and use it immediately in cases of a good arm; I mean a good supply or a complete vesicle which yields a larger supply of lymph than usual. I used this before the points got dry, on the same day. I never have occasion to preserve lymph. Since February 1882 I have only used arm to arm lymph. There is nothing in this book to show when I had any other lymph. I have used Government lymph once only, one day I forget (*book produced*); it was 27th June; Mr. Allen brought some down, and asked me to try it. I used it for eight vaccinations out of twenty-five, of which six were unsuccessful. I selected healthy children. Two of the successful cases were used on the 4th of July as vaccinifers; before vaccinating I first clean my lancet, dip it in water, wipe it with a towel, and then very carefully open a vesicle. Up to last year I used to use the dry points in about one-half of the cases; I now use the lancet; the change was suggested by Dr. Airy; when I open a vesicle I expect to see a thin fluid exude; I expect to see lymph exude, a thin fluid; I cannot describe it more accurately; I want no more time to consider my answer; it is sometimes of a creamy colour, it ought not to be, or light yellowish; sometimes it is mixed with blood; lymph ought to be of a light blue colour; it ought to be clear; I do not know what you are driving at; I should use it of that colour if it were clear; I have not seen it of any other colours than described; I expect to find it clear; I should not use it unless I found it clear; lymph with blood in it has always a red colour; I should not use lymph of a yellowish colour; I do not wish to alter this answer; I never examine the lymph by any other method than by the naked eye; I have sometimes by microscope, but I never found anything wrong in it; I should not use lymph with traces of blood in it; there might be blood in the lymph in small quantities, not discernable by the naked eye; lymph with blood in it should be rejected to prevent all chances of impurity; lymph with blood from a syphilitic child would be unsafe or injurious; so would lymph without blood in it from such a child where syphilitic sores or symptoms were present; a child may have congenital syphilis and not show it, and look just as healthy as if it had not; I might take

lymph from a syphilitic child without knowing it; I have read of cases of syphilitic children having been used as vaccinifers, but I have not known a case in my own practice; my rule in choosing a vaccinifer is to take a healthy child with a good arm; I do not ask if the child is the first or second, or how many children are in the family; I generally prefer a child as my vaccinifer whose parents are known to me; my vaccinifers are not all known to me; I do not take a child who has been re-vaccinated; when I said lymph is light blue, I meant colourless; I make use of lymph which is thin and clear; I do not know that the Local Government Board prohibit lymph which is thin and watery; I have read their instructions as to this, but I can't say how long since; I should use a clear vesicle; I should use lymph of not a too watery appearance; I have never stripped an infant brought to me for vaccination; I think I could make a thorough examination of the body of a child without entirely stripping it; I was the original single public vaccinator for Norwich; I last used Government lymph on 27th June last; I saw Threadkill's child probably five or six times before death; I cannot say the last time; I gave certificate of death; I believe the erysipelas was produced by the scratch, or the lymph, or atmospheric influences, not by ill health of the family; I have no reason to think it was due to bad nursing; I think it bad treatment poulticing the arm; I don't think it was the lymph; I do not think the vaccination scratch more likely to produce erysipelas than an ordinary scratch; I am not aware that Dr. Jenner has stated that erysipelas is one of the proofs of true vaccination; I did not state in my certificate "erysipelas after vaccination"; I have had no instructions to do so; other medical men give different certificates. I have not seen any of the Registrar General's Returns during the last five years; I do not know there is a column with separate heading for erysipelas after vaccination; I gave Goulard lotion for the child Threadkill; lotion was first applied; it was first applied within a day or two after vaccination; nitrate of silver was painted on it, I think, twice; I should in similar cases to this have always given the same certificate.

Mr. Henley.] I had not attended a case of erysipelas within a fortnight of the 13th June. A sister of the child Threadkill, I am informed, had erysipelas about the same time as the child I vaccinated. I think she was about seven years old. I had no mistrust of the lymph I used. I had at the time an ample supply of arm-to-arm lymph. Mr. Allen, my deputy, made application for the calf lymph without my instructions but with my knowledge. I thought it right to change the lymph. I mean the strain, not for my own satisfaction, but for other people's. I have changed the strain before; it was last year. Mr. Cross obtained it from Manningtree. If I had known this investigation was to take place I could not have been more careful. I decline to say; it is impossible to say whether the child would now be alive if it had not been vaccinated.

Dr. Airy.] I have two or three lancets; they are never used for other purposes; they never leave the vaccination box. Ivory points are used frequently. The same points are used again and again after being rubbed on emery paper.

Mr. Blofeld.] When I was appointed public vaccinator by the guardians there were several other candidates. I did not produce testimonials. I have been in practice since the year 1857; before being appointed I did not produce a special certificate of proficiency in vaccination; it was not necessary. Before being appointed public vaccinator, I had a large experience as a vaccinator. I have a large vaccination station in Norwich, probably one of the largest in England. The station is at my residence; it is a very convenient one; the sanitary condition is excellent. My lancets I received from the cutler on the 6th of June; one of these was used for Threadkill, and I afterwards used it for other children, who did well. I always have two lancets in use on the same day, and they were so used for the thirty-three cases on the 13th June, and the great majority did well. I went to St. Swithin's, to the house of Threadkill; it appeared to be in a good sanitary condition for that class of person. I did not see the back premises. Mrs. Threadkill made no complaint to me as to the state of the child's health. I last saw the child of Armes about the same time that Threadkill's had erysipelas; it was then quite healthy. Sewell's child was healthy on the day of inspection; I have not heard that any of the previous vaccinifers have been unwell. This is the first time that any complaint has been made against me since my appointment, either to the guardians or to the Local Government Board. Any injury to the skin might cause erysipelas. If a child suffered from erysipelas when lymph is taken from it, I think it would not affect the child vaccinated. I am aware of no other disease than erysipelas that could be directly communicated by vaccination. Arm-to-arm vaccination is considered the best mode of vaccination, and this I do. Eczema might come out directly after vaccination, but not as the result of vaccination. I agree with the opinion expressed by Dr. Reynolds in his book in 1866, at pages 512 and 513. (*Passage read.*) In Herr von Ziemssen, at page 408. I agree with his opinion. (*Passage read from page 768 of Weiss and Pepper.*) I agree with this opinion.

The unsuccessful case of Coan was not attributable to the lymph used. The unsuccessful case of Tyler was not owing to defective lymph. This child died. Change of temperature is likely to cause erysipelas. On that date (13th June) the weather was very hot, and then it changed to cold. Before vaccinating this child I made a proper examination of it; I knew there was nothing the matter with it. I do not consider it necessary to strip a child. I do not know that I am required to inquire of a parent whether she is suffering from syphilis. I make examination of vaccinifers to satisfy myself that there are no signs of syphilis before vaccinating from them. My experience would enable me to detect fever without using a thermometer. I do not think a single

case of miscarriage would be evidence of syphilis. Lymph with a too thin and watery appearance I should not use. I observed that the arm of this child (Threadkill) had been poulticed. There was erythema after the poulticing, before erysipelas appeared. This would increase the probability of erysipelas appearing.

Dr. *Airy*.] When I first saw this child after vaccination it had a poultice on. It was beginning to inflame and swell. I cannot say that the poultice was intended to allay inflammation. It was on the arm over the vaccine marks. It was not on the hand; it was a bread-and-water poultice. I directed the mother to discontinue it. I do not remember the mother saying when it was put on.

Mr. *Henley*.] I believe the erysipelas was caused by the poultice, but I won't say that it was. After the child's death I made no examination of the premises to find a cause for erysipelas. I think the death was caused by injudicious treatment in poulticing the arm. I cannot go so far as to say that the child's life was thrown away by the use of the bread poultice, but I believe it was. I think it a most pernicious thing to put bread poultices on a vaccinated arm.

I think blood poisoning might be produced by blood or pus in the lymph. I think it would appear within twenty-four hours after vaccination. Erysipelas might be one of the manifestations of blood poisoning. The lymph was not examined with the microscope.

Mr. *Grant*.] I do not know that on 13th December 1877 Mr. Burgess made a complaint to the board of guardians. I sign up the vaccination register, and put the lymph numbers in. I enter the results at the end of the vaccination after inspection on the eighth day. The entry is made after I have seen the child; that is my invariable rule. There are no special circumstances which I consider to justify me in breaking that rule. The rule is never broken; I always finish up the books before I leave the room. Percy Threadkill was never presented for inspection. An entry was made in the vaccination book. You will see an erasure in the book. The entry was "S." (successful). That was made on Tuesday morning, 20th June. I had seen the child; it (the vaccination) was successful. I had seen the child, I believe, on 19th June; the vesicles were fully developed; they presented very nearly the normal appearances, but a little cloudy. I saw the vaccination register the day before yesterday; there was an erasure. When I make entries of inspections, it is my duty to enter the place where inspection took place. Threadkill was inspected at home. I ought to have put "at house," but I did not. There are not many such inaccuracies in the register. I believe that is the only one. As far as I know, it is the only one in the book. I suppose it was ticked off by Mr. Thirkettle. I am responsible for the entries. Mr. Thirkettle enters "A." in cases which he finds unsuccessful. I enter the "S.s." I don't think I entered Coan as unsuccessful, nor Harvey's; I don't remember about Harvey's case. The register shows Threadkill's case as inspected at the station, and as successful. Coan's case has been entered as unsuccessful. There is an erasure in the column for success; I made it. "S." has been scratched out. There was in Coan's case an entry of "S." in the "successful" column, which was erased the same day. The insertion of the "S." was merely accidental. Coan was not brought to the station. That case is ticked off as inspected at the station. When I altered it I was aware it had not been inspected at the station, but I did not alter the entry and put "house." In Harvey's case also there has been a similar erasure. They were made at the same time, on the 20th; I do not remember making similar corrections before. I may have done so. "Postponed" (in Coan's case) was written by Mr. Thirkettle; I was responsible. I had seen Coan the day before (Monday); the mother brought it to me in the street; it had not taken at all. By an accident I entered it as successful, and afterwards altered. The charges are made up every quarter.

I have heard Mrs. Threadkill's evidence. I did say, "I am going round to see the woman from whose child yours was vaccinated." I never said any such thing as "she must have had it very bad in her blood whilst carrying her baby." I remember I was very anxious about the case, and wished to go and see the other child. I never do use that expression. I am quite certain I did not use those words, or words to that effect. I heard Mrs. Threadkill say the poultice was on only about an hour. I was and am still of the opinion that the poultice caused the irritation. I do not think it was at all to be wondered at, after the castor oil and the poultice and all, that the child died. I consider the treatment most pernicious. I do not consider pernicious the rain water or sweet oil, or white of egg, or all mixed. Don't think that did any harm. I think the castor oil applied on the rag was most pernicious. I think the bread-and-milk poultice was most pernicious. With the exception of any latent disease, I consider the castor oil and the poultice mainly responsible for the erysipelas. I consider that castor oil is an irritant, especially when it is exposed to the air and gets rancid. I consider the bread-and-milk poultice largely responsible for the erysipelas. A poultice applied to an ordinary scratch on a baby's skin would probably not produce erysipelas. I think it makes no difference whether applied to ordinary scratch or to vaccination scratch. I had had no experience of cases of poisoning by septic material; no experience of cases of pyæmia in the last 20 years. I am not acquainted with the appearances of active blood poisoning if I saw it. I am perfectly aware that if putrid material is introduced into the body blood poisoning is set up and erysipelas follows. (*Passage quoted from Mr. Netten Radcliffe's Misterton Report.*)

Threadkill's vesicles did come up, but they were retarded. About the fifth day they began to rise; on the sixth day they filled sufficiently for me to describe as successful.

I think the vesicles were retarded by erysipelas. I do not think the introduction of active septic material a better explanation of the erysipelas in Threadkill's case than castor oil and bread poultice. I have not been in the habit of applying castor oil and bread poultices to scratches on the skin. Have had cases of such poulticing come under my notice. Am sorry to say some persons attending my station do so. It has caused inflammation, made the heads come off, and left open sores. If I have found it out I have told them not to use it. Such inflammation has extended round the pustules to a larger extent than usual, not to shoulder or middle bone of chest. I can't say to fingers' ends. I have had cases in which acute inflammation has followed vaccination. I have not had any cases in my practice in which erysipelas has followed vaccination without the use of castor oil, with the exception of the cases under inquiry. I can't recollect any other case. I do not usually see cases after the eighth day.

Mr. Chittock.] Nearly all the entries in the Vaccination Register are made by Mr. Thirkettle; only four columns in which I make entries. I write my initials in certain columns. I enter the "S." in successful vaccination, but mostly Mr. Thirkettle enters the "U." for unsuccessful cases. On other pages there are similar alterations to be found unconnected with the present inquiry.

Between July 1881 and June 1882 I had sharpened my lancets myself every Tuesday. After a certain time they require to have a polish put on them. I sharpen them on a hone and carefully clean them. I always keep the hone in my vaccination-box; it is never used for any other purpose.

The sleeve of the child's dress ought not to have touched the vaccination wounds at all. The effect would be to cause irritation and inflammation. Before she left the station I cautioned her (as I caution all others) to be careful that the sleeve does not touch the arm, and to stay in the room till the blood was dry. When I first went in to the station I saw Mrs. Threadkill in the waiting-room and took hold of the child and said what a fine child it was. I saw the legs. In my opinion I made a sufficient examination of the child.

I had attended Mrs. Armes in her confinements. I think more than once I had not noticed the slightest appearance of disease about her.

Mr. Henley.] Constitutional disturbance after vaccination arises usually in about three days; in three days at the earliest. Local effects begin also to appear about the third day.

Dr. Airy.] I had not shortly previous to 13th June attended any case of abscess or other disease that could cause erysipelas. The cloth on which I wipe the lancet is a clean one every Tuesday. It is different from the surgery cloth.

Mr. Henley.] I was not aware at the time I treated Percy Threadkill that the family were subscribers to the dispensary.

Mr. Chittock.] I did not give any medicines for internal use.

Mr. Henley.] I cannot certainly remember whether I used the lancet or ivory points in vaccinating Percy Threadkill.

(signed) Wm. Guy.

The lymph used in this case was not examined by the microscope.

LUCY JANE THREADKILL; Examined by Mr. Henley, says:—

I am the wife of William Threadkill, who is a miller's earter, and resides in St. Swithin's, Norwich. On the 13th of June I took my boy Percy William to the public station to be vaccinated; the child was vaccinated about 11 o'clock. It was not restless when going to the vaccination station, but in its usual state; it was not drowsy that morning, nor appearing as if sickening for any disease. I held the child while Dr. Guy vaccinated it; I did not see the child from whom the lymph was taken; he was between five and six months old; he was at that time healthy, and had been so from its birth. My child was taken ill the same day; he was vaccinated about eleven; he was taken ill the same day after dinner, directly after. I saw that the arm got very red, and very much inflamed. The child appeared to be very ill, and turned very drowsy; it was very restless all night. I took him the same afternoon to a neighbour with a large family (Mrs. Dady); she told me to apply some linen rag soaked in castor oil, and I put it on that afternoon over the vaccination places where the arm was most inflamed. I gave no medicine; the child gradually got worse. On the 14th it was so ill I could not dress it; the arm was much inflamed, and the swelling went down to the fingers' ends, and a redness raged across the chest. I bathed the child with new milk on the arm and chest, having taken off the oiled rag. It did not do much good. On the same day I put a milk-and-bread poultice on the arm; this was on the 14th after dinner; it remained on about an hour; it did not ease the child. I took it up to Dr. Guy to his surgery; he said, I was a fool for putting the poultice on. Mr. Guy looked at it, and gave me a bottle of lotion; I used it the same evening. I had taken off the poultice; I believe the lotion did the child good. I took it up again to him on the 15th to his surgery; he gave another bottle of lotion; I believe it was the same; it did not do much good. The lotion drove it from the arm down to the hand; it went across the chest, and down the other arm to the fingers. The lotion appeared to be rather inclined to a brown colour. I did not put a poultice on again; I gave the child no other treatment. On the 16th I took it to Mr. Guy again; the child was about the same; he told me to take

take the child home, bathe it with new milk; he gave me nothing; I did so. On the 17th it was about the same; he told me to bathe it with milk. I did so; the child got worse. I went to Mr. Matthews on that day—the child was inflamed all over—on Dereham-road. I believe he is a medical man; he gave me a bottle of lotion which I used the same evening. I don't think it did any good. On the 18th the child was much worse; it was very much inflamed, and had great blisters down to the fingers' ends. I applied the white of an egg, salad oil, and soft water mixed together, and bathed the child with it. A neighbour advised me to do this. The child was no better for it. No doctor saw it on that day. On the 19th, Dr. Guy called between three and four in the afternoon; I sent for him; he put some wadding on. He said, he would use it as for a burn. After this I used nothing; Dr. Guy gave me no lotion. He did not put anything on the arm then or at any time. On Tuesday, 20th, child continued getting worse. The wadding was kept on. Dr. Guy called, and saw the child on Tuesday; he called every day, and saw the child every day up to the day of its death. On the 20th he called, as far as I can remember, between three and four o'clock. I have had one other child vaccinated. I have seen the children of neighbours after vaccination. My child was in much worse condition than children usually are after vaccination. I could see that the child was not going on as well as other children usually do after vaccination. I put the poultice on to cool the arm. I did not put it on to prevent vaccination taking effect. I had no reason for not having the child vaccinated earlier; it was always in good health; my little girl between five and six years had erysipelas about a week after I buried the baby; she was attended by Mr. Richardson. I don't know that any of my neighbours have had erysipelas in their houses.

Dr. Airy.] I believe my little girl had kissed the baby while it was ill; I don't know what instrument was used. I had not been in any house where erysipelas was present. I don't go out nursing; I don't take in washing; I had not been near any person with erysipelas. I went alone to the vaccination station; both I and the baby were wearing our ordinary clothes; no alteration has been made in my premises since my child died. There are no bad smells from any cause, not from the privy nor the drain.

Mr. Grant.] My child had always been healthy till it was vaccinated; it was a very fine child. On the 13th of June there were many persons there at the station. Dr. Guy had the child's neck and left arm uncovered; he did not take the child up; he only looked at the arm, and said it was a very fine child; he asked me no questions at all; he did not touch the child at all to examine it. I turned my head away, and did not see him vaccinate the child. I went straight home from his surgery; I did not put the child down from then till I noticed the state of its arm; because it continually kept crying; the places on the arm were bleeding when I got home. I took its clothes off, and saw this; I mean I saw this at Dr. Guy's station; I put nothing on to stop the bleeding. The arm of the frock sleeve was wet with blood when I got home about ten minutes after; there were four cuts on the arm; the frock sleeves covered the marks; the child kept crying. I next looked at the arm between two and three; the redness spread from the arm to the crease of the shoulder; it was a red flush all over. I next looked at the arm about six o'clock that evening, the inflammation had got down to the elbow and up to the crease of the shoulder; it was crying the whole time; the child cried itself to sleep.

24th AUGUST 1882.

LUCY JANE THREADKILL re-examined.

I DID not see that the child shivered on the 15th; the shivering began on Saturday after the child was vaccinated; I saw no signs of convulsions till close on a week after; the convulsions began on the Wednesday week after vaccination; the child was sweating all the time; the sweating began on the Wednesday, the next day after vaccination; the child was not sick at all; the bowels were regular before vaccination, but they were not so afterwards. The Wednesday week after vaccination the bowels were very loose and always running; when Mr. Guy came on the Monday after vaccination, and said in reply to a question of Mrs. Bishop that there were many cases like this, in a hospital, of poisoned blood. Mrs. Bishop said it was a shame to torture the child like that, and Dr. Guy said, "Pshaw! I want none of that, I want to get the child well." Dr. Guy said one day during the time he attended my child, I am going round to see the woman whose child my child was vaccinated from, for the woman must have had it very bad in her blood while she was carrying her baby (while pregnant). Erysipelas did not show in my little girl before the baby was buried.

Dr. Airy.] The vaccine poeks did not show on the baby's arm until the Sunday after vaccination; then they showed a little; they never rose; they were very flat, and a brown spot in the middle of each place; the places festered a little round all the four places;

no scab formed on the marks, they never run at all, a skin on the top turned brown; I got the castor oil from Mr. Cowling the baker, of Lower Westwick-street; I have the bottle which contained the oil.

Mr. Cross.] Mrs. Dady advised me to put the oil on; her husband is a miller's carter; Mrs. Rumsby is a widow; I can't say she is against vaccination; she advised me to put on the bread and milk poultice. I called in Mr. Matthews, because I did not feel satisfied with Dr. Guy. I took my child to Dr. Guy on Saturday morning, it might be before 10; Mrs. Guy took it up to him. I sent for Dr. Guy again on the Monday, because I could not afford to pay Mr. Matthews; I think I paid Mr. Matthews 1s. I did not tell Dr. Guy that I had called in Mr. Matthews; the child was not worse after using Mr. Matthews' lotion. Mr. Warnes, a neighbour, a carpenter, advised me to use the egg and oil application; I had no other advice about the treatment of my child; I first saw Mr. Bliss about a week after my baby died; he came to me; I had not seen him before, and did not know him; he said he had heard that my child was very ill after being vaccinated; I believe Mr. Bishop was with him; I don't know that he is a member of the Anti-Vaccination Society, nor that he has been prosecuted for not having his child vaccinated; my child never had shivering before vaccination; I have had three children vaccinated, and one living not vaccinated; I believe my second child died through vaccination; I believe in 1875, because it came out full of sores after vaccination, and was never well after; I always said so; it came out in sores, and was never well afterwards; Dr. Cohnan, of Barford, attended that child; I have had six children; three of them have been vaccinated; two of them died after vaccination; Elizabeth was not vaccinated, she is still living; Francis, vaccinated, dead; Frances Emma, vaccinated, alive; William, not vaccinated, dead; Laura, not vaccinated, dead; Percy, vaccinated, dead.

Mr. Chittock.] I have pretty good health; I am in good health; have never had erysipelas. My husband is in good health; he has never had erysipelas. I have been married 11 years. I did not have Percy vaccinated earlier because I do not like vaccination. I received a notice from the vaccination officer after the child was three months old. I went to Dr. Guy shortly after; I had no conversation with Mrs. Bishop about it. I don't think I visited a friend of mine who had recently been confined about the time my child was vaccinated; no such friend visited me about that time. Elizabeth is about 10 years old. I did not see her kiss the baby; I saw Frances kiss the baby several times during the last week. I did not pass through a room on the day the child was vaccinated, but I went into another room before the child was vaccinated. Dr. Guy did not look at the child and remark to Mrs. Guy, what a fine child it was; I did not see Mrs. Guy that day. Dr. Guy did not say to me, after vaccination, that as the child was fat, and the day very warm, I should not let the frock sleeve touch the scratch. He did not tell me to remain in the room till the blood dried on the arm; he gave me no directions how to treat the child after vaccination. I sent Elizabeth to Mr. Cowling for the castor oil; I had bought oil of him before myself in the shop. There is a chemist's shop in St. Benedict's about the same distance from my house. I believe there is a drain of oil still in the bottle. When I first went to Dr. Guy after vaccination, I told him I had applied castor oil on the child's arm. The child wore a red scarlet twill dress, with a white cotton lining; the edge of it was red scarlet twill. I can't say when Mr. Bliss first visited me; he did not advise me to go to Mr. Matthews; he gave no advice for the child's treatment. I did not notice the child's lips were dry till three days before it died; they were then very dry. I was nursing the child, and it took the breast readily, until the milk supply suddenly failed, about three days before death. I did not notice the child's tongue at all. I thought that Mr. Matthews was a regular medical man when I sent for him, and I still think so. I told him that the child had been vaccinated on the Tuesday, and had been attended by Dr. Guy. I asked Mr. Matthews if he thought there was any chance for the child, as Mrs. Guy had said in the morning it was only erysipelas. He looked at the child's arm and chest, not the legs; he then supplied me with a bottle of lotion, and told me to see him on the Monday morning. The bottle he gave me was broken; I let it fall. I did not go to him on the Monday. The child was then much worse; it gradually got worse. I did not put any of the lotion on the vaccination marks, but from the elbow down to the fingers' ends, where there were blisters; the lotion was also applied to other parts, the other arm, the chest, and the back. The lotion was not applied to the vaccination places because the inflammation had left that part of the arm. On the Monday I went to Dr. Guy again. There was something written upon the bottle, but I can't say what. I did not tell Dr. Guy I had used lotion supplied by Mr. Matthews, because Dr. Guy did not ask. I don't know that it crossed my mind. From that time up to the death of the child Dr. Guy attended every day till the child died; he made no charge, yet I found fault with his attention.

Mr. Henley.] I found fault with Dr. Guy because he never came to my house sober.

Mr. Chittock.] I did not like, when my child was so near death's door, to go to another doctor. I did not then know he would not make a charge; I thought he would charge the same as any other doctor; I did not know any other medical man to call in except Mr. Richardson, who is my own doctor; I did not call him in because had I taken my child to Mr. Richardson I thought he would say Dr. Guy must take out what he has done. I went to Mr. Matthews because I thought he would tell me whether my child would recover

recover or not. I told Mr. Bliss that which I have said here this morning (that Dr. Guy told me he was going to see the woman from whose child mine was vaccinated); he did not take notes of what I told him. I believe I told Mr. Bliss the day Dr. Guy told me, or the day after. I went to Mr. Tillett's office; I told Mr. Bennett I had lost a child through vaccination. I don't know if he wrote anything down in writing. I have repeated several times since it took place the conversation with regard to poisoned blood. Mr. Bishop asked me to go to Mr. Tillett's office to tell him a little about the child I had lost. I went there on Tuesday last, after I had received a summons to attend here; Mr. Guy's name was mentioned. I did not tell Mr. Bennett of the conversation with regard to poisoned blood because I had to return to my work at two o'clock, laundry work, and had not time. I did not stop in Mr. Tillett's office more than five minutes.

Mr. *Henley*.] When Dr. Guy came to my house, not sober, several persons were there and saw him. Their names are Mrs. Gofton, Mrs. Chettleburgh, and Mrs. Bishop; my husband never saw him so; he came on three or four occasions in that state between the vaccination and the time of my child's death. I thought him not sober because he fell on to the couch when he came in at the front room door; whenever he came he always smelt of liquor, and could not walk straight. I then thought he was not in a proper state to give sufficient evidence about my child. He was in this state when he came to my house during the last week. During the last week the child was alive I think he was not in a fit state to attend the child. One of the three women I have named was always with me when Dr. Guy came; I was never alone. I have no reason to think that Dr. Guy was not sober when he vaccinated my child.

Mr. *Grant*.] My husband is not a member of the Anti-Vaccination Society. I never heard of it till after vaccination on 13th June. Mr. Bliss suggested nothing to me as to doing or not doing anything to the child's arm.

Dr. *Airy*.] The laundry I alluded to is in St. Martin's-lane; it is a public laundry. I do not take my own things there to wash; I do washing for other people; I do not know what people the linen belongs to; I have been working there about three weeks; this is the first time. I was not washing there at the time of my child's vaccination.

Mr. *Henley*.] Mrs. Bishop was present when the conversation with Dr. Guy took place as to the poisoned blood.

Mr. *Chittock*.] I did thank Dr. Guy for his attendance on my child after Mrs. Guy told me he would charge nothing for attending. Dr. Guy gave me 3 s. 6 d. to help to bury my child.

(signed) *L. J. Threadkill.*

EMILY ARMES says:—

Dr. *Airy*.] I AM the wife of Henry Angus Armes, an engineer, living at Spitalfields Back-road, Norwich. My infant was vaccinated the beginning of June. My child was born on 7th February. I don't know from what child mine was vaccinated. I took it to the Vaccination Station; Dr. Guy vaccinated it. I think he used a lancet and quill. He vaccinated it direct from another child. The vaccination rose properly. I have had children of my own vaccinated before; they went through their vaccination well. This child went through its vaccination as well as the others did. The arm began to rise on the Friday, vaccinated on Tuesday, June 6th. On the following Tuesday all four places were fairly risen; the places were not unduly inflamed. I took the child back to the Vaccination Station on that Tuesday and showed it to Dr. Guy; he said, what a nice arm the child has; he vaccinated three children from my baby. In vaccinating these children I can't say that he used a lancet; he took the lymph from the child's arm on ivory points. I am sure of that. I can't say what he did with the points. I did not know any of the women whose children were vaccinated from mine. I recognize Mrs. Threadkill as one of them. I don't know how many ivory points were used. After the lymph had been taken from my child's arm on the Tuesday the child's arm did not appear to be much inflamed, hardly so much as my other children were. He was not very well; rather poorly the day after the lymph was taken. The pocks on the arm had hard brown heads standing well up from the arm; they came off about a week after. No eruptions appeared on the skin; the child has remained quite well from that time. I had not been near any person suffering from erysipelas on the day I went for vaccination, nor on any day between that and the day of inspection. There had been no illness in my neighbourhood. I and the child wore our ordinary clothes when at the station. My husband was at that time, and is now, in good health; I was also in good health. There are no bad smells in my house; no one lives with us. My other children are healthy, and were so at the time of this vaccination. I was nursing the baby at that time, but it has also had

cow's milk from its birth ; it also got some solid food. I can't remember whether lymph was taken from the arms of my other children. None of my neighbours visited me on the morning of vaccination. My child has had no illness since its birth excepting on the two days I have mentioned. (*The child was here produced to Dr. Airy.*) He is a bright child ; he has no pimples on the skin.

Mr. Grant.] The child was rather poorly on day of inspection. I saw Dr. Guy take the lymph from the arm. I saw the lymph come out ; it was a sort of clear colour. The arm was a little irritated ; on the two days following it extended just round the marks. I did not see any blood on the day of vaccination, nor did I see any on the child's dress when I got home. I do not remember Dr. Guy asking any questions before taking the lymph, nor on the previous week before vaccinating the child ; on that day he made no examination of the child (6th June). I stripped the child's arm by pushing the clothes off the arm quite down ; Dr. Guy then made the cuts in the arm ; he did not examine the child when he took the lymph from it the next week. Dr. Guy vaccinated my three other children ; he was my private medical attendant until my last child. I have had nine children, four are living ; the whole of the other five children died at the time of birth. Dr. Guy did not turn the child up to examine it ; he must have seen its neck. When the child was vaccinated I took the hat off. Dr. Guy could have seen its head and ears ; it wore a short frock on ; he could therefore have seen its legs ; it was dressed in a similar way on inspection day. The lymph was taken on ivory points, or bone. It was only the ordinary restlessness caused by vaccination when my child was unwell. Dr. Guy last attended me as my doctor two years ago. Five of my children were born dead ; all those born dead were born before full time. My two first children were miscarriages ; third is alive ; fourth was dead ; fifth is alive, and the next two were dead ; eighth and ninth are alive. I have not had hard or difficult labours.

(signed) *Emily Armes.*

THREADKILL'S CASE.

HANNAH RUMSBY says:—

I AM a widow, and live in Bowling the Baker's yard. Mrs. Threadkill showed me her child on the 14th June, the day after vaccination. I saw the arm, which was very much inflamed from the neck to the elbow ; it was a dark red colour, and very hard ; it went quite up to the crease of the neck ; this was at ten in the morning. I have seen a good many children after vaccination, but I never saw an arm like that ; it is not what I should expect to see after vaccination. There was nothing on the arm when I first saw it ; the mother was crying, and said she did not know what to put on. I advised her to put a milk rag on, and then a milk poultice ; this was on Wednesday morning. I saw it again that afternoon ; the rag and the poultice had then been applied, and the arm was getting much worse ; the inflammation was going across the chest. On Saturday the 24th I stripped the child, and found the body much swelled, and more than a dark blood colour, a purple ; the flesh was hard ; the child shaked very much, as if it was paralysed. At first there were blisters containing a creamy matter which got hard ; they were all over, excepting the feet ; some of them were as large as the palm of a hand.

Dr. Airy.] I had not been out nursing shortly before I thus saw the child ; I had not been out nursing for two years. I never saw a child in such a state after a poultice. I have not heard of any case of erysipelas, or other serious disease, in the neighbourhood. Mrs. Threadkill's house and premises are very clean, and not likely to produce disease. I have frequently put poultices on children's arms after vaccination, and this about four or five days after vaccination, to allay irritation ; it cools it, and takes the heat out ; I never knew it make it worse. I might have done this in a score of vaccination cases. I did not look at the child's tongue at all ; the mouth was very dry at last. The vaccination cuts looked about the same as they usually do when I first saw them.

The mark + of *Hannah Rumsby.*

J. J. Henley.

25TH AUGUST 1882.

THREADKILL'S CASE.

JOHN ROBERT PEARSON says :—

I AM a cutler in Norwich. On 5th June I received five lancets from Dr. Guy; they were very discoloured from use and very blunt; nothing left on them; they were stained from use; they were not rusty; they were discoloured half-way down the blades. When I received them they were not in a state fit for use by a doctor. I work for most of the medical men in the city. I am constantly having lancets to sharpen. Those I received from Dr. Guy were in the same state as those I generally receive from other medical men. I don't often have them so blunt as these were, but the discolouration was the same. I received them 5th June, and returned them on the 6th, before 10; they were not fit for use when I received them, decidedly not. The last I received from Dr. Guy, before these was in July 1881. I get lancets from other medical men, sometimes from three to six months, not a longer period. I think a lancet used 20 times a week should be re-sharpened every week, certainly more than once in a twelvemonth. When five lancets are in use, they should be sharpened four or five times a year.

Dr. *Airy*.] I grind, glaze, and re-polish them; crocus powder is used for polishing on a leather buff wheel; it is a dark coloured powder; I get it from London. The lancets were quite clean, equal to new, when I returned them to Dr. Guy; they were put in clean writing paper. I wipe them with a damp rag, and last with washleather, quite clean, that has not been used before; this last touches the lancets.

Mr. *Chittock*.] The lancets sent to me by other medical men are unfit for use, but not quite so blunt as these; I believe these lancets had been sharpened on a hone, and I thought their bluntness was from having been sharpened a great many times on a hone. I do not find this to be the case with lancets received from other medical men; there are other cutlers in Norwich who do this work. I have worked for Dr. Guy for several years. I believe I have before received lancets from him which have been sharpened on a hone.

Mr. *Henley*.] I received a message from Dr. Guy that the lancets were to be returned to him on the following Tuesday morning for vaccination, the five lancets. I sharpened two for him last Tuesday, they were two of the five.

Mr. *Grant*.] I have had no erysipelas in my house, nor in my locality. I have had no complaint from Dr. Guy. I charge 4 *d.* each lancet for sharpening. That is the reason medical men send them to me rather than do them themselves. Sometimes I receive lancets from other medical men with something left on them that had not been wiped off. The lancets which I received from Dr. Guy have always been wiped clean.

(signed) John Robert Pearson.

EMMA DADY says :—

I am wife of John Dady, a miller's carter, Waterman's-yard. I know Mrs Threadkill and her family. I saw her child, Percy, before he was vaccinated; he was as fine a child as ever I saw. I saw him on the Monday after vaccination; I saw the child on the day it was vaccinated; the mother called on me on her way back from the station. I saw the child's arm; there was nothing the matter with the arm then, only a small speck between the two top cuts; it was a slight red speck; it was a small pimple. I advised her to apply castor oil on a piece of linen rag, not in consequence of the pimple, but because it was a fine child, and I thought inflammation might fly to the arm. I have always used castor oil for nine of my children, and it kept the inflammation down. The arms were not inflamed; they had beautiful arms. I did not tell Mrs. Threadkill where to get the castor oil. I did not see any other child that day who had been vaccinated, nor that child again till Monday following. The four cuts on the arm appeared as cuts do in ordinary cases. There was not more blood than usual; it was much the same as in other cases. The blood had not run down the arm; it had dried round the cuts; they looked much the same as in other cases; there was no redness of the skin close to the cuts. I did not observe if the child was restless. It was not in my house long enough for me to notice. When I saw the child on the first occasion Mrs. Threadkill was on her way home. I said nothing to the mother about the pimple. I only saw one; if it was as big as a pin's head it was as much as ever it was. She called on me on her way home.

Mr. *Grant*.] I can't say whether it was before or after dinner when Mrs. Threadkill called on me with her baby, when I told her of the castor oil. When I used castor oil

for my children it produced no erysipelas. I did not use it to prevent vaccination, but to allay inflammation.

Mr. Cross.] I have advised the use of castor oil in other cases, on the day of vaccination. I had no experience in poulticing. When I first saw the child after vaccination the arm was such as I should expect to see it. Dr. Guy vaccinated seven of my children; they did well. On the Monday after vaccination I saw the child; I did not advise anything should be done. It is but a quarter of an hour's walk from Dr. Guy's station to my house. I did not notice blood on the arm. I got my castor oil at a chemist's. Of course I did. My house is in a direct line from the station to Mrs. Threadkill's. I cannot remember whether Mrs. Threadkill came to me in the afternoon. I am quite sure she came in the morning. I was preparing dinner.

(signed) *Emma Dady.*

SAMUEL MATTHEWS says:—

Dr. Airy.] I am a surgeon and accoucheur, and live in Dereham-road, Norwich. I remember Mrs. Threadkill coming to me on a Saturday with her baby, who was suffering from erysipelas; I saw its chest and arm; I did not see the legs. The erysipelas extended to the wrist from the shoulder on the vaccinated arm; I saw the vaccination pustules, three or four, I am not certain which; they were in rather an advanced state; erysipelas had extended to the chest in a small degree, about to the middle line, as far as I recollect; I advised the application of a lotion which I supplied; it was a 12-ounce bottle; it was composed of liquor. plumbi one drachm, and infusion of agrimonia 12 ounces. There was a printed red label on it, printed "Lotion, to be used outwardly." I did not see the child again, for I told the woman she had better take it to Dr. Guy. I am often consulted by mothers of vaccinated children; I might, in similar cases, advise the use of this lotion. I have not noticed bad effects from the use of agrimonia; it generally allays inflammation in a day or two, and is a mild astringent; it is used externally and internally. From the appearance of the pustules on the arm, I think vaccination had taken effect; they were between the size of a 4*d.* or 6*d.* piece; they were turning brown in the centre; they were not elevated above the skin. If pricked, I think the lymph would have been cloudy, not purulent; they appeared about 8th day's vesicles.

Mr. Grant.] I have been consulted by women with vaccinated children in about nine or ten cases from the city in the last 12 months. Generally they were bad cases of erysipelas; I did not think the child would live; I am quite sure that the vaccine pustules had formed.

Mr. Cross.] I don't think the mother told me she had put castor oil or poultices on the arm; I knew Dr. Guy had seen the children. If I had known he was attending the case I should not have treated it; I have had experience in vaccination; I have vaccinated about 1,000 in London.

Mr. Chittick.] I am not an advocate for vaccination. I am not on the medical register; I am not qualified to be on the medical register. I might have told Mrs. Threadkill to see me again on the following Monday; it is possible I might have done so; I do not think castor oil would do any harm, but I should not recommend it.

(signed) *S. Matthews.*

THOMAS WILLIAM RICHARDSON, M.R.C.S., L.S.A., Surrey-street, Norwich, says:—

I am one of the District Medical Officers of Norwich (District No. 4, Population 9,864). I know the Threadkill family; they are members of the Norwich Dispensary, which I attend. I attended one of the family, the baby, in March last; I can't remember what was the matter with the child, but think it was some slight gastric ailment. The prescription was—

Liquor. Hydrarg. Perchloridi, ʒi	} One teaspoonful to be taken three times a-day.
Tinct. Camphoræ Comp., ʒi	
Syrupi, ʒii	
Aq. ad. ʒiii	

I believe it was for diarrhoea. That was on 11th February; it came again on 20th March, and had the same medicine; it appeared a fairly healthy child. I attended Mrs. Threadkill in her confinement; I did not see the child again.

The other child (Frances) I must have seen on the 26th June; I gave it a simple saline mixture; I cannot remember if it had erysipelas. The child was brought to the dispensary only once; I did not visit it. That would not have been the treatment I should have administered in a very severe case of erysipelas. I cannot say it had not erysipelas, but I can say this, that it was not suffering a severe attack of erysipelas. In that case I should have given a stimulant, and an external application. When attending Mrs. Threadkill, I knew that two of her children had died with convulsions. One of them I had attended; the other I heard of from the mother; I always thought the family a fairly healthy

healthy family. The one I attended died at about five months; I thought it unhealthy, because it died of convulsions; I cannot remember if there was any external sign of unhealthiness. I did not know of any previous erysipelas in the family; I do not think there was any special tendency to erysipelas in the family. I know the house and locality they live in; the house was of average cleanliness and wholesomeness. The locality is not a very desirable one, shut in by old buildings, in an old part of the city; I think (I am not sure) I have not had any cases of erysipelas in that locality. The members of my dispensary come from all parts of the city; I do not know how many from the locality in question.

Mr. Grant.] There was nothing special about this child, Percy, when it was born. The ailment I treated it for in February and March was only temporary; I gave a little mercury as an alterative; I have been three-and-a-half years in practice in Norwich; I think there has been rather more erysipelas in the city than usual in the last eight months. In my practice it has occurred in isolated cases, not groups. Roughly, eight cases pretty equally distributed over the eight months; they were not connected, but eight isolated cases. So far as I know there has been nothing that could be described as an epidemic of erysipelas in Norwich. The number of members attached to the dispensary is, roughly, 2,000. There are three medical officers. I take between 200 and 300 persons. The eight cases of erysipelas I speak of were, some receiving relief, two were private patients; I do not know of any among the dispensary patients. As district medical officer, and as dispensary medical officer, I think I should know pretty well what was the general state of health of the city. As to the age of the child that died in convulsions, I spoke only from memory. In accordance with the terms of subscription to the dispensary, I should have attended to Mrs. Threadkill's child (Percy) without extra payment. Their subscription is per head; the baby was evidently paid for by the subscription in February and March, and up to end of June, and therefore I should have attended the child gratuitously if brought to dispensary, or at home. I should have spoken to Dr. Guy about it before I treated it. The mother could have taken the child to the dispensary and claimed gratuitous attendance; the child was not brought to the dispensary. No application was made to me for the child to be attended at home; had application been made, I should have consulted Dr. Guy before attending the case which he had treated.

Mr. Cross.] I do not consider a child vaccinated at station a private patient of Dr. Guy; I should have objected to attend any case suffering after vaccination without consulting Dr. Guy, if the parents considered the illness to have arisen from the vaccination.

Mr. Chittock.] In case of emergency, in a case of very bad erysipelas after vaccination, if there were danger I should have prescribed for it; but if there were any chance of consulting Dr. Guy I should have done so; the Threadkill's were entitled to demand my attention. If it were a very bad case, and I were told the child required immediate attention, and I knew that Dr. Guy had been attending, I should not attend unless they told me they had told Dr. Guy they did not require his services any longer, otherwise I should not attend; I should tell them to go to Dr. Guy.

The prescription of a saline mixture would indicate that there was a slight febrile affection, not erysipelas; most probably not any disease of the skin, unless, perhaps, a little erythema.

In speaking of eight cases, I only speak of cases in my own practice.

In the mixture I gave the baby, the mercury would be given for a disordered state of stomach and bowels; I prescribe mercury in cases of syphilis. I do not clearly remember what the child was suffering from; I might have given such a prescription in a case of syphilis, but probably not; I should probably not have put in a small dose of paregoric; the paregoric would not be an improper thing in a case of syphilis, if the bowels were purged.

Mr. Henley.] There is no case-book kept at the dispensary.

Mr. Grant.] I have not seen in the Threadkill family any sign that could be certainly ascribed to syphilis; convulsions was the only thing I noticed that might be one of the symptoms of syphilis; I cannot recall any other symptom. The treatment in February and March was, I think, given as an alterative.

Mr. Cross.] If I received a relieving officer's order to attend a child suffering after vaccination, I should attend the case; but I should take the earliest opportunity of communicating with Dr. Guy.

(signed) T. W. Richardson.

SARAH CHETTLEBURGH says:—

I am wife of William Henry Chettleburgh, a rivetter; I live in St. Swithin's-terrace.

Mr. Grant.] Mrs. Threadkill lives next door to me; I saw the child just after it was vaccinated at half-past 12 on Tuesday, 13th June; I saw the child's arm; I had seen it that morning about nine o'clock; it was then quite well; at half-past 12 it was beginning to be inflamed, just a little round where the cuts had been made; it was round each of them; otherwise the child seemed well; I don't recollect seeing a pimple; the mother asked me to look at the arm; I said, I thought it looked a curious arm for so short a time

after vaccination ; she said, she had been told to put a castor-oil rag on ; I don't think she had then put it on ; nothing was on when I first saw the arm.

Mr. *Henley*.] I said I thought it was a curious arm, because it became inflamed in so short a time after vaccination ; I had not seen an arm like that so soon after vaccination. There was nothing unusual about the cuts on the arm ; it did not properly rise.

Dr. *Airy*.] It did rise two or three days before the child died ; I saw the child on the Saturday, four days after vaccination ; I saw the child on the morning the child was taken to Mr. Matthews ; it had not risen then, nor did it rise till two or three days before the child died ; I have often seen children's arms after vaccination ; there were four cuts on the arm ; there was no pock till two or three days before death ; I think vaccination had taken ; I never put a poultice on any of my children's arms.

Mr. *Cross*.] The inflammation did not extend very far at first, about as large as a 6d. round each place.

Mr. *Chittock*.] When I first saw the child no castor-oil rag had been put on its arm ; I know one had not been put on before tea-time ; I was in the house the chief part of the time ; I was there also before going to bed, and I don't believe castor oil had ever been put on ; Mrs. Threadkill said she had been told to put one on ; I remember the appearance of the arm on the Saturday after vaccination, as well as any other day ; if Mr. Matthews says it had risen on that day he must be wrong ; I know I am right.

Mr. *Henley*.] I did not see anything about the child's dress to account for irritation ; I saw it before dinner ; the arm was out of the sleeve ; I know of no case of erysipelas in the neighbourhood ; there are no bad smells from the drains or back premises.

(signed) *Sarah Chettleburgh*

ELIZABETH BISHOP says :—

I am wife of Walter Bishop, who is a sugar boiler, and lives in St. Swithin's-terrace.

Mr. *Grant*.] I saw Mrs. Threadkill's child on the Tuesday it was vaccinated, 13th June ; she told me she had been advised to put a castor-oil rag on, and she asked me if she should do it ; this was after dinner ; I told her to use her own judgment about the rag ; I did not see the child at the time of this conversation ; I was there when Dr. Guy put some medicated wool on ; I said to him it was a shame to put the child to such torture ; he said, hush ! hush ! I want to get the child well ; he said, when he went out, he should go round and see the mother of the child from whom this child was vaccinated, as she must have had erysipelas very bad while carrying her child ; before vaccination it was a fine healthy baby, but afterwards it became ill, and kept getting worse till it died ; when I saw the child in the evening, a castor-oil rag was on its arm ; I saw no poultice on it ; I don't know of erysipelas being in my neighbourhood ; just before death the vaccination marks were just showing ; I cannot say how long before death.

Mr. *Cross*.] I live three doors from Mrs. Threadkill ; I saw her child first between five and six o'clock ; she showed me the child's arm with the rag on, and I saw a redness on the lower part of the arm, gaining down below the elbow ; its dress was not taken off ; I saw the child on Monday the 19th, before the Tuesday, when it should be taken to the station, and the vesicles had just begun to fester ; I do not hold with vaccination ; my husband has been fined by magistrates for not having his child vaccinated.

Mr. *Chittock*.] My husband's fine was paid for him by a society ; I have never spoken to Mr. Bliss nor Mr. Bennett ; I do not remember telling my husband, or any other person, what Dr. Guy said ; I have not repeated it till to-day ; no other person was present but Dr. Guy and myself, and Mrs. Threadkill.

Mr. *Grant*.] I received my summons to come here last night ; I have not told anything to any member of the society.

I have not read the evidence of Mrs. Threadkill in the paper to-day, nor had it read to me.

(signed) *Elizabeth Bishop.*

28th AUGUST 1882.

THREADKILL'S CASE.

CLARISSA GUY, Wife of Dr. Guy, says:—

I PREPARE and place a clean cloth every Tuesday morning in the vaccination box ; I also prepare the surgery cloth ; I take the vaccination box to my own bedroom immediately after vaccination ; the fresh cloth is put in the vaccination box every Tuesday morning, about five minutes before it is required ; it is an entirely different cloth, as regards size and shape, from the surgery cloth, and they cannot be mistaken.

Mr. *Chittock*.] I know Mrs. Threadkill quite well ; I first saw her after the child was vaccinated ; I saw her in the surgery ; I cannot say whether it was the Wednesday or Thursday after vaccination, but it was one of those days ; I think she had the child with her, but I am not sure ; no one was with her at that time ; on that occasion she said her child was ill, and Mr. Bishop had asked her if Mr. Bliss might see her child ; she said the child was very much inflamed about the shoulder, and Mr. Bishop had asked her if Mr. Bliss could see the child, and she had said she had no objection ; I next saw her the day after ; the baby was with her, and also a little girl, about six or seven years of age, was with her ; this little girl's face was covered with sores ; she said it was her own little girl ; I said to her, "Talk about your baby, why don't you have this child seen after?" She said, "I shall take it to my own medical man, Dr. Richardson." The child came several times to the surgery for lotion and wine, which I sent for the baby ; I saw the baby at the surgery two or three times after that during that week ; I saw it in her night-gown, with a shawl wrapped round it, and I told Mrs. Threadkill to take it home at once, and Dr. Guy would see it. Mrs. Threadkill told me her milk had left her on the fourth day ; I understood by that the fourth day after vaccination ; I asked Mrs. Threadkill if her daughter Frances had ever kissed the baby, and she said she had frequently done so. After the baby's death Mrs. Threadkill came for a certificate, and she also asked for a little assistance ; I spoke to Dr. Guy about it, and he said "I have nothing to do with it ; give what you like." I went into the surgery, and gave her 3 s. ; she said "I thank you over and over again for your kindness, and Dr. Guy also."

Mr. *Grant*.] I sent the wine and lotion by the child. I am absolutely certain about the cleanliness of the vaccination cloth ; I always attended to that myself ; no one touched the cloth but myself ; I always washed out the basin myself ; I take the vaccination box into my own bedroom, in order that the servants may not interfere with it. There has been no illness in my own family. I am often in the vaccination room when Dr. Guy is vaccinating, and he is always very clean and particular ; I know from my own knowledge the enormous importance of absolute cleanliness in all surgical operations.

Mr. *Henley*.] Dr. Guy was not present in the surgery when I had the conversation with Mrs. Threadkill about the state of her daughter Frances ; I told Dr. Guy about this some days after Mrs. Threadkill had told me, and before the death of the baby ; I also told Dr. Guy the mother had said she should take the little girl Frances to Dr. Richardson ; I am sure I saw the child Frances within two or three days after vaccination ; the sores on her face were as large as the top of one's finger nails.

Dr. *Airy*.] There was one sore larger than the rest, at the corner of the child's mouth ; I do not remember which corner. Mrs. Threadkill merely said Dr. Richardson was her medical man.

(signed) *Clarissa Guy*.

SARAH ANN AGNES GUY, says:—

Mr. *Chittock*.] I am 13 years of age, and am the daughter of Dr. Guy. When the servants are not in the way I go to the outer door ; I remember, some time in June last, a little girl, about six or seven years of age, coming from Mrs. Threadkill's ; she said she came from Mrs. Threadkill's ; she said she had come for the lotion for Mrs. Threadkill's baby ; I showed her into the surgery ; I noticed that the little girl's face was covered with sores ; I saw this same girl again with her mother and the baby ; I cannot say how long this was after I had first seen her ; on the second occasion I saw her in the surgery ; I think I see the same person here as I saw in the surgery, and whom I took for Mrs. Threadkill.

(signed) *Sarah Ann Agnes Guy*.

REPORT RELATING TO

MARTHA BEALES says:—

Mr. *Chittock*.] I am servant to Dr. Guy. I was in Dr. Guy's service in June last. I have often let Mrs. Threadkill in. The first time I let Mrs. Threadkill in she had the baby on her arm, and a child of about six years of age by her side. I noticed that the face of the child, by Mrs. Threadkill's side, was one mass of sores. I think I have seen this child of six twice. I asked the child how old it was.

Dr. *Airy*.] I have myself had the small-pox, but not erysipelas. None of my fellow servants have been ill. I have not seen anyone at Dr. Guy's with erysipelas before the 13th June.

(signed) *Martha Beales*.

MRS. THREADKILL says:—

Mr. *Grant*.] I have heard the evidence of Dr. Guy, Mrs. Guy, Miss Guy, and Martha Beales. The first time the flush appeared was the first week after vaccination of the baby. The baby was vaccinated on the 13th June, and the sore broke out after the Monday in the week after vaccination. A place breaks out with a white fester every year, and gradually spreads a little farther, and this year this did not break out until a week after the baby's vaccination.

Mr. *Henley*.] It is not the fact, as stated by Martha Beales, that the face of my child was one mass of sores.

Mr. *Chittock*.] It was a mistake of mine when I stated, on my first examination, that my daughter had erysipelas about a week after the burial of the baby. On the second day of the inquiry the disease I was speaking of was the same as I am now speaking of, and the same for which I took the child to Dr. Richardson. On the second day of the inquiry I called the disease erysipelas, and suggested that Frances had caught it by kissing the baby. I was perfectly well aware at the time I made the suggestion that it was a disease from which my daughter Frances suffered annually. When I took the child Frances to Dr. Richardson he did not tell me what was the matter with it. He did not call it erysipelas. Frances never went alone to the surgery, and only went with me once when I went for the certificate. It was not Frances but my eldest girl who brought home the wine and lotion from the surgery. There is nothing the matter with my eldest girl; she is not subject to sores or erysipelas. Frances has not been attended by a medical man in previous years, but only last June. In June last her face began to swell, and I got frightened, and took the child to Dr. Richardson. The places broke out this year in the same spot as in former years. I cannot say the exact day on which these places broke out this year. I first noticed a blister on Frances' face; it broke out as on previous years with a small blister on the side of the mouth. I cannot say exactly when I first noticed this, but I am sure it was after the Tuesday when the baby should have been taken to the vaccination station. As near as I can say, these places break out on my daughter Frances' face about June in every year. I had a medicine bottle of wine from Mrs. Guy which my eldest girl took away from the surgery. I was at home when the officer came for the bottles which contained the lotions and the castor oil. I said that my biggest girl had taken the lotion bottle off the shelf and put some water in it. There was nothing put into the castor oil bottle by me or any of my household. This bottle is in the same state as when I left off using the oil.

Mr. *Grant*.] Dr. Guy said it was erysipelas, and I took it to Dr. Richardson because the child's face began to swell. It was in consequence of what Dr. Guy had said, and because the face was swelling, that I took it to Dr. Richardson. There had been no swelling in previous years.

Dr. *Airy*.] I am certain the cheek was not red. I did not know that erysipelas was eating until Dr. Guy had told me it was.

(signed) *L. J. Threadkill*.

TYLER'S CASE.

CHARLOTTE, Wife of FREDERICK TYLER, of Union-street, in the City of Norwich, Coachmaker, says:—

Mr. *Grant*.] I HAVE one child alive. On the 13th June last I took my baby to the vaccination station, and it was vaccinated by Dr. Guy. The baby had never ailed anything since its birth up to that time; it was between three and four months old. When I got to the vaccination station I stripped the baby's left arm. I was sitting down with the baby on my knee. When my turn came I went into Dr. Guy's room; I then stripped the arm, and sat on a chair by the side of Dr. Guy; he then vaccinated the baby. He asked no questions, but said it was a fine baby. He did not ask me where

I came

I came from. The baby was dressed in short clothes ; Dr. Guy did not turn up the clothes. When I stripped the child's arm, the arm and the shoulder could be seen, but not the chest. After the vaccination the arm bled very much ; Dr. Guy told me to sit on the other side of the room until the blood had dried. I did not notice the child from which my baby was vaccinated ; after the blood dried I took the child home. I stayed in the vaccination room about 10 minutes. I first noticed something the matter with the child after tea on the same day as it had been vaccinated ; the child was very cross, and the arm began to swell where the places were ; the child slept during part of the night, but about five o'clock the next morning the child was very cross, and the arm was very much inflamed ; during the day it got worse and worse ; the arm turned red to the elbow, it was most red near the places ; the redness spread from the arm to the elbow ; the skin of the child was very tender, and it could not bear to be touched. On the Wednesday I did not dress the child ; I did not notice any convulsions on the Wednesday, she kept starting and jumping every few minutes ; on the Wednesday night she slept pretty fairly. On the Thursday morning I got up at between five and six o'clock, when the child was much worse, and had convulsions ; the arm was very red, and hard and swollen. I sent for Dr. Crook at about nine, and he came about one o'clock. From the time the child was vaccinated up to the time Dr. Crook came, I did not do anything to the arm ; the child had not been dressed since the Tuesday night. When Dr. Crook came I showed him the child's arm, and he said, "You had better take the child to Dr. Guy, and let him see what he has done to it." I did not take the child to Dr. Guy's, as it was too ill, but my husband went for him on Thursday evening. Mr. Crook told me to put some milk and warm water on to the arm, which I did. When Dr. Guy came, between six and seven on the Thursday evening, I showed him the child's arm, and told him what Mr. Crook had told me to do ; he did not say anything. When my husband went to Dr. Guy he told him to get a pennyworth of sugar of lead, and apply it to the arm ; I did not use any sugar of lead. When Dr. Guy came I showed him the baby's arm, and he said, I am sorry for it ; I also told him what Mr. Crook had ordered, and he said, go on with it ; and this I did ; the baby slept pretty well that night ; the next morning the redness and swelling had got down the arm past the elbow ; the baby was crying all this day. On the Thursday Mr. Crook gave me four powders, and told me to give the child one then, and one at bed-time. On the Saturday blisters broke out ; some of them were as large as a sixpence ; this was on left arm ; the convulsions left off on the Thursday. On the Friday Dr. Guy came again ; he did not give me anything ; I told him I was giving the child Mr. Crook's powders ; Dr. Guy did not apply anything to the child. Dr. Guy came again on the Saturday, but he did not add anything to his treatment. Mr. Crook came again on the Saturday, and said he thought it would turn to erysipelas, and told me to go on with the milk and water ; during that week on to the following Sunday, both Dr. Guy and Mr. Crook came ; they did not come together. On Sunday the erysipelas spread across the chest, and down the back ; the left arm was purple and still hard ; between that time and the time of the death Mr. Crook gave me a bottle of medicine for the child to take ; Dr. Guy during that time had not given me anything, although he came and saw the baby ; I went on with Dr. Crook's treatment ; by the Sunday I had finished the powders Mr. Crook gave me, and simply continued the milk and water order. On the Saturday after vaccination Dr. Cadge sent down a bottle of lotion for the child ; I showed this to both Mr. Crook and Dr. Guy ; I went on using this lotion, which lasted two days. Mr. Crook sent me a bottle of medicine, a teaspoon of which was to be given every two hours ; I do not remember when this was ; Mr. Crook also told me to put some salad oil all over the child. The purple colour spread all over the child's body about the Wednesday, the 21st June, down to the toes. The body was hard and swollen. The first two or three days I noticed the rising of the vaccination pocks, which then died away. From this Wednesday morning the child got worse ; blisters as large as a shilling breaking out over the body. The child gradually got worse, and ultimately died on the 26th. Dr. Guy did not come to see the child after the second Friday after the vaccination ; Mr. Crook continued to come up to the death, and he also came one day afterwards. In the first week, the Friday or Saturday after vaccination, Dr. Guy said he was very sorry and would not have had it happen for 1,000*l.*, and that he would drive round to the woman whose child mine was vaccinated from, and ask her about it. St. Swithin's-terrace, where Mrs. Threadkill lives, is about half a mile from mine. Dr. Guy did not say if he had any other cases at that time. I have never ailed anything. There are no bad smells about my house ; it is quite a healthy house. No other family lives with us. I have never heard of any of my neighbours having erysipelas. Mr. Crook did not attend me at my confinement ; I had a midwife. Mr. Bailey is my doctor. I have had four children ; the first child died in my confinement, the second died from teething and bronchitis, about one year old ; the third, a girl, is alive. It is two years and one month old. It has been vaccinated, and so also was the second child. I had no objection to vaccination, nor, so far as I know, had my husband. From the time the child was vaccinated until it died, nothing was done to the child's arm except what the doctors ordered. All the child had were the powders and lotion ordered by Mr. Crook and Dr. Cadge. The child had only the breast during this time.

Mr. *Chittock*.] I took the things quite off the child's arm ; I did not notice when I put the child's dress down whether the breast was exposed or not. The child was wearing a velvet hood, which I took off in the surgery, so that its head was exposed ; the child was wearing a short dress which exposed its legs ; Dr. Guy called it a fine child, to which I said nothing ; he did not ask me whether the child had ailed anything. Dr. Guy looked at

the child about a minute before he vaccinated it. During the vaccination I turned my head another way; I cannot say whether ivory points or a lancet were used to vaccinate the child. Dr. Guy simply told me to stay until the blood got dry; he did not tell me to be careful that the places were not rubbed, nor did I hear him tell anyone else so. The vesicles got a little bigger in two days; there was a little redness and the places swelled; there was a little matter in the places within two days after vaccination; I mean the white heads which I have seen in previous cases of vaccination; these white heads died away on the Friday. Dr. Guy came daily to see the child up to the Friday before the death. I told Dr. Guy that Mr. Crook was attending the child and giving it medicine. I do not know if Dr. Guy came merely to see how the child was getting on. Dr. Cadge did not see the child before sending the lotion; the child now alive has never ailed anything. The child took the breast readily, quite up to the morning of its death.

Mr. *Henley*.] Mr. Crook came on the Saturday after vaccination without being sent for. The scratches in the arm were about the same as in the cases of my other children.

Mr. *Cross*.] Dr. Guy said on the Thursday evening when he called that he should come again without making any charge.

Mr. *Henley*.] I do not go out to work. No neighbour suffering from erysipelas ever came to my house.

Mr. *Cross*.] Dr. Guy did not always call at the same time in the day. He came sometimes at noon and sometimes in the evening.

Charlotte × Tyler's Mark.

(signed) *J. J. Henley.*

FREDERICK TYLER says:—

Mr. *Grant*.] I am the husband of the last witness; I have heard my wife's evidence, which, so far as I know, is quite accurate. I went to Dr. Guy on the Thursday evening after the vaccination. I told Dr. Guy the child's arm was very much inflamed and swollen, and that the inflammation was spreading. He said, "What! Is it inflamed already? It is very strange." I asked him to come and see the child as soon as possible. He said he would come the following morning; he also told me to get a pennyworth of sugar of lead and make a lotion of it and apply it to the child's arm. I accordingly got a pennyworth of sugar of lead at Mr. King's, chemist, Post Office-street. When I got home I did not use this sugar of lead, as I thought it better to mention it to Mr. Crook, as he had prescribed for the child. I therefore went to Mr. Crook's in the evening, and he told me not to use this sugar of lead but to continue the milk and water treatment. That which my wife has stated as to the condition of the child, and which I have heard, is quite accurate. The water-closet to our house is 12 or 14 yards down the garden. I have never suffered from any serious illness besides rheumatism. I have never heard of any fever or erysipelas in my neighbourhood. I work at Mr. Colman's, but no one who works with me has had erysipelas or fever. We wash our own linen at home. The child did not go out of the house after vaccination.

Mr. *Chittock*.] When I went to see Dr. Guy I told him Mr. Crook had recommended me to go and see him. I work in the blacksmith's shop at Mr. Colman's; there are about 2,000 hands in all employed at Mr. Colman's; there are about 30 men at work in my shop; there would be more than 1,000 men employed at Mr. Colman's, and these would come out of the works at the same time.

Mr. *Henley*.] I do not remember losing only one day from a cold.

(signed) *Frederick Tyler.*

JOHN CROOK, of the City of Norwich, M.R.C.S., says:—

Mr. *Grant*.] I have been in practice in Norwich more than 40 years; I remember being sent for to see Mrs. Tyler's baby; Thursday, the 15th June, about one o'clock; I have no notes of the case, and speak from recollection; the child was slightly convulsed; there was an appearance of fever and twitching motions; I examined the arm; there was an erysipelatous appearance of the left arm, extending from the vaccination marks up to the shoulder, and down to the elbow, arising apparently from vaccination; in my opinion the erysipelatous appearance arose from no blame either in the vaccinator or in the vaccine; vaccination is often irregular in its course; sometimes it goes on very quickly, other times tardily. In this case of Tyler's child inflammation of the parts seems to have occurred sooner than usual. On the Thursday when I saw the child there seemed to be an erysipelatous inflammation arising from some peculiarity of the skin or in the vaccine virus; generally speaking I should call it vaccine lymph or virus, and not ichor. On the Thursday the child's arm was swollen and hard, but I did not observe that the child appeared drowsy; I then prescribed one quarter grain of calomel and James' powders; I told them to apply salad oil to the parts affected and also tepid milk and water. I saw the child again the next day; the husband saw me in the evening, and he told me about Dr. Guy ordering sugar of lead, but as I did not know the quantity I told him to go on with

with the milk and water treatment. On the Friday I again saw the child, and there then was confirmed erysipelas. On the Thursday there was no appearance of vesicles forming. On the Thursday and the Friday there was no appearance of the formation of vaccine vesicles. On the Friday I consider it was a case of acute erysipelas; I did not add to my treatment. In the second week I gave the mother a bottle of acetate of ammonia, a few drops of chloric ether, and tincture of cardamoms. I treated the child for acute erysipelas; I have never seen such a bad case of erysipelas before or so soon after vaccination. With the exception of the inflammation on the arm on the Thursday I saw nothing to lead me to the conclusion that the child was an unhealthy one. I know nothing of the locality of the place to make me think that there was anything specially likely to cause erysipelas. I had no cases of erysipelas in my practice, and I have had none since February last. I saw some lotion which I understood had been sent, but I told them to continue my prescription. Mine is a general practice spread over the city; I had no cases of erysipelas besides this on 13th June; I can only speak as to my own private practice. The tension and hardness spread all over the body, which had a livid hue. I have seen vaccine cases which have run on quickly and produced erysipelatous inflammation in the course of three or four days; I have met several of these cases in the course of my experience; in those cases the inflammation spread from the crease of the neck to the elbow, and affected the glands in the axilla, and sometimes the vaccine sores have run to ulceration; I used milk poultices with oil and lard to soften the skin; in the case of an ulcer on the arm I consider milk poultice as soothing. I use almond oil or lard. If a cold bread and milk poultice were used the day after vaccination I think it would retard the vaccination; I should think it would be improper; it would interfere with the regular course of vaccination; I cannot say if it would produce any other result; I have not had such a case as this within the last few months; I gave a certificate of death, and stated the cause to be erysipelas from vaccination; this certificate still represents my opinion; I do not think there would have been erysipelas if the child had not been vaccinated.

Mr. *Henley*.] I cannot say whether erysipelas was caused by the state of the skin; but if the scratches had not been made there would have been no erysipelas.

Mr. *Cross*.] I do not think any blame attached to Dr. Guy, or to the vacciner.

Mr. *Grant*.] I never saw the vacciner till I saw it here the other day.

Mr. *Chittock*.] I mean by "erysipelas from vaccination" erysipelas from the scratches on the arm. Erysipelas might have arisen from scratches totally unconnected with vaccination. Cow-pox in the cow is always attended by erysipelatous inflammation.

Some children have done well under vaccination, and others badly, all being vaccinated from the same lymph. The children in whom erysipelatous inflammation appeared after vaccination appeared to be fit subjects for vaccination at the time of vaccination. More depends on the vacciner than on the child vaccinated. Those children who had erysipelatous inflammation appeared healthy at the time of vaccination. At the time of vaccination I do not require to strip a child to see its state. If I observe any suspicious appearance I make a minute examination. I do not use a thermometer, and do not think it necessary where the surgeon has had experience. It is not my practice to inquire of my patients if they have suffered from syphilis, if they presented a healthy appearance. I have known most of my patients a long time. I should not use castor oil, but prefer salad oil for outward application. The castor oil might irritate. If the oil was rancid I should not advise its application to an arm recently vaccinated. It is described as an irritant even if not rancid, and might cause slight inflammation. Erysipelas cannot be accounted for; rancid oil might produce inflammation, which might be followed by erysipelas. The reason I did not advise Tyler to use the sugar of lead prescribed by Dr. Guy was partly because I did not know the strength, and because I prefer my own treatment of salad oil and milk and water.

Dr. *Airy*.] I have never treated the Tyler family before and know nothing of them.

Mr. *Cross*.] Occasionally erysipelas arises without any apparent wound or scratch.

Mr. *Grant*.] I do know that Mr. Erichsen says that cases of idiopathic erysipelas are so rare as not to be taken into account. The vaccinations which I perform are as a private practitioner. I am not under the instructions of the Local Government Board. Within the last two or three years I have seen no cases of pyæmia. I know the symptoms generally of pyæmia. The symptoms described by Mrs. Tyler I should not think are pyæmia; pyæmia takes a longer time. Erysipelas and pyæmia are produced pretty well from the same cause. In this case erysipelas appeared very shortly after vaccination, and altogether impeded the progress of the vaccine vesicle. [Opinion of Dr. Netten Radcliffe read by Mr. Grant.] I agree with this description; I am of opinion that some disease other than the vaccine disease may be carried by vaccine lymph into a child, but I have made no special study of it, and have had no experience of such cases.

Mr. *Henley*.] If the child's arm had been scratched by a piece of glass I do not think it would have produced the effect in this case, nor so quickly. In this case I think the erysipelas was caused by the lymph or by some peculiarity in the constitution of the child.

Mr. *Grant*.] When I went on Thursday, I saw only the left arm, and saw no peculiarities in the skin at that time.

(signed) *John Crook.*

HARRIETT WESTCOTT, Wife of THOMAS WESTCOTT, Union-street, Norwich (General Dealer), says :—

Mr. *Grant*.] I know Mrs. Tyler; I lived next door to her two years; I knew her baby, and saw it before it was vaccinated; it was a fine girl. Before it was vaccinated I never saw anything the matter with it whatever; the skin was clear and fresh; I did not see any rash about it; I have had the child in my arms and have seen it washed; there were no spots or scabs on the head; the eyes were clear and bright; it was what I should call a good baby; it was as nice a baby as I have ever seen; there has been no erysipelas or sickness in my locality; it is generally considered a healthy place.

Mr. *Henley*.] I saw the clothes put on the child the morning it was vaccinated. It had its usual healthy appearance and did not seem to be sickening for any complaint. I do not go out from home washing or charing.

Harriett + Westcott's Mark.

(signed) *J. J. Henley.*

Mr. GUY, of the City of Norwich, Public Vaccinator, says :—

Mr. *Chittock*.] I remember the case of Mrs. Tyler's baby; I vaccinated it on the 13th June last; before doing so I made such an examination of it as satisfied me it was in a fit state for vaccination. I took the lymph from the arm of Armes' child, No. 44. The order in which the children appear in the book would not represent the order of vaccination; I cannot give the order of vaccination. There were four children vaccinated from Armes' child successively. I gave my usual directions to Mrs. Tyler not to leave the surgery until after the blood had dried, and to be careful not to let the clothes touch the vesicles. This child was never brought either to the station or to the surgery again, and I never saw it except at the mother's house. After seeing Mrs. Tyler on the Thursday I went to see the child the same evening; I then saw the child's arm, which was very much inflamed from shoulder to wrist. I knew that Mr. Crook was attending the child, and for that reason I did not prescribe anything. I saw the child from time to time until the Friday week following vaccination. On the first occasion on which I saw the child no vesicles had formed, nor did any form during the whole of the time I visited the child. On the last occasion on which I saw the child erysipelas had set in; I cannot form any opinion as to the cause of the erysipelas.

Mr. *Grant*.] I think that my examination of the child was such as to satisfy the requirements of the Local Government Board; I think they are general orders. I consider that the orders of the Local Government Board are to be specifically carried out. I consider that my examination did specifically carry out the orders of the Local Government Board (*read* from Instructions). I consider that these three instructions just read should be specifically carried out. I ascertained, in Tyler's state, that there was no febrile state; I did not ascertain whether there was any irritation of the bowels; I did ascertain whether there was any chafing behind the ears; I did not fold the ears down; I did not ascertain whether there was any eczema behind the ears or chafing or eczema in the groin. I cannot say if I ascertained whether there was any chafing in the folds of the skin. I do not consider I have complied specifically with the instructions of the Local Government Board, but my examination of the child satisfied myself. I consider that these instructions can be followed specifically. I consider that an officer acting under the orders of the Local Government Board, ought to specifically carry out the instructions of his superior officers. I am sure the erysipelas spread from the child's shoulder to the wrist on the Thursday even when I saw it. I should not account for the state of the child by the theory of spontaneous erysipelas. Threadkill was vaccinated from No. 44; he suffered from erysipelas which was of the same type as that from which Tyler suffered, and attended by exactly similar appearances. The erysipelas in Tyler's case appeared soon after that in Threadkill's. Threadkill's child died about a day before Tyler's. This combination of circumstances does not enable me to form any opinion as to the cause of the erysipelas.

Mr. *Chittock*.] I did not pull the ears down; I could see whether the child had eczema behind the ears by looking without folding the ears down. I do not remember the examination of this particular case, and cannot say whether there was any eczema behind the ears.

Dr. *Airy*.] I did not know Tyler's family before, and had never treated them. I saw nothing about the house likely to cause erysipelas. I did not on this occasion go to the house of the vaccinifer; I did not make inquiries, or take any steps, to ascertain the condition of the children vaccinated on the same day.

Mr. *Grant*.] Up to the time Dr. Airy was making inquiries I did not think about the matter.

(signed) *William Guy.*

L A M B E R T ' S C A S E .

Norwich, 30 August 1882.

I HAVE this day examined the female child of Mary Elbeck and James Sewell, which was stated to have been born on the 7th of last March.

I found it to be a fairly nourished infant, and with good relative development of the head, trunk, and extremities.

With the exception of a slight crack or fissure behind the left ear there was no chafing or excoriation at the folds of the neck, groin, nates, or other part of the body, and it was scrupulously clean.

It had been recently vaccinated, and three of the ordinary scars resulting from the operation were visible upon the left arm in the usual situation.

A papular eruption, peculiar to infants, was noticeable upon the shoulders, arms, thighs, and legs; a little also of the same kind was to be seen on the face, the left cheek and the left shoulder being the places where it was most manifest at the time of my examination. The palms of the hands and the soles of the feet were quite free.

The scalp of the head was quite free from eruption, but just at the nape of the neck there was some irritation; this was probably intensified in that locality by rubbing on its pillow, and by the warmth derived therefrom.

The eruption was distinct and elevated; some spots were larger than others, and some of a brighter colour, while some had a slight central depression, and in passing the hand over the skin the sensation conveyed was like that of travelling over little millet seeds scattered indiscriminately upon the surface.

I ascertained that the child had never been suckled, but brought up with the bottle; that it had never suffered from the "snuffles," sore eyes, or other discharges, and that it had had cordials administered to it.

The eruption, in my opinion, is not syphilitic.

Its proper definition is "strophulus," and its occurrence, I believe, to be due to constitutional causes, such as teething and disturbed alimentations.

(signed) *Thomas W. Cross, F.R.C.S.,*
22, St. Giles-street, Norwich.

29th AUGUST 1882.

FANNY SOPHIA, Wife of GEORGE EDWARD LAMBERT, of Queen Caroline-yard, Norwich, Labourer, says:—

Mr. *Grant*.] Queen Caroline-yard is distant from St. Swithin's-yard about half-a-mile. My child Alice Sophia was vaccinated by Dr. Guy on the 6th June last. I took the child to the vaccination station. When there I stripped the left arm, so that the whole of the arm and the left side of the body up to the neck was quite bare. I sat down with the baby on my knee. I sat in front of Dr. Guy during the vaccination. During other vaccinations Dr. Guy has usually asked me whether I was well and whether my husband was well. I have had three children vaccinated at the public station, including Alice Sophia. I cannot remember if Dr. Guy asked me any further questions. Dr. Guy has attended me privately and would know where I live. I do not remember if he has asked me whether the baby is well. I do not remember anything special taking place in the case of Alice Sophia. On other occasions Dr. Guy has lifted the clothes up. On this occasion he felt of the child's leg, but I cannot say how high he lifted the clothes. On other occasions he lifted the clothes, and I wondered what he did it for. The baby's hat was off. I cannot say if Dr. Guy looked behind the ears. I cannot say what Dr. Guy used to vaccinate. He used a little bright steel knife and an ivory instrument. He made the cuts on the baby's arm with a lancet. I saw the child my baby was vaccinated from. I think Dr. Guy took the lymph from the arm with a bone instrument and applied it to my child's arm, but I cannot say for certain. Dr. Guy made four places with the lancet. The arm did not bleed more than usual. I stopped there until the blood dried. On the morning of the 6th of June I thought the baby looked slightly unwell, but not sufficiently so to mention it to Dr. Guy. The baby was a little paler than usual. The child was born 2nd February, and had not been unwell before. There was no relaxation in the bowels nor peculiar colour on the morning of vaccination. From the 6th to the 13th June I saw nothing unusual in the child, but that it was going on nicely. I cannot

remember when the pimples first appeared. When I took the child up for inspection there were four pimples formed. I cannot say whether there was any matter formed in the pimples. Dr. Guy used my baby to vaccinate three others from. I do not know the child from which my baby was vaccinated, but I saw it, and that it looked healthy. I first noticed something the matter with the baby on the Thursday morning, up to which time the arm had gone on all right. On the Thursday morning I noticed the left arm had turned red about half-an-inch below the places. The place inflamed was about two inches long when I first noticed it. It was all one colour, a flush. The inflammation went down the arm only. Up to this time the baby had been well. There was nothing wrong with the bowels. Ate well and slept well, and took the breast and plain water sop. I did not do anything to the child then. In the evening, between seven and eight o'clock, I took the child to Dr. Guy, but I am not sure how far the inflammation had spread by that time. It had spread a good deal farther than in the morning. I think it extended below the elbow, but am not sure. There was no difference in the colour. From the day the child was vaccinated up to this Thursday I had put nothing whatever on the arm, and had not washed where the places were. I had not put the sleeve of the frocks over the vaccinated arm. Up to this time I had not heard of any erysipelas or sickness in my neighbourhood. My husband and myself had been perfectly well. I do not go out to work anywhere, but do dressmaking at home. I am not aware that my dressmaking work came from a house in which there was sickness. At this time my children were quite healthy. When I took the child to Dr. Guy it was wrapped in a shawl. He said he wished I had not brought it out. I am not sure if he said because it had taken cold, or because it might take cold. I do not remember if he said anything else. He did not say what was the matter with the baby. He gave me some lotion for the arm, and I think he told me to get some castor oil. I gave the child some castor oil twice. I also put the lotion on the arm. On the following morning I did not notice much difference in the arm. The child appeared to be about the same. On the Saturday the child was not so well. The inflammation had spread lower down the arm and gone down the wrist. It did not look a darker colour. The vesicles began to turn brown. The arm looked nice. It was not inflamed where the vaccination marks were. Dr. Guy called on the Sunday evening. I did not think the child so well, as it did not take the breast quite so nicely, but the arm looked the same. I asked Dr. Guy if the throat was sore, and he said no. I did not ask him what was the matter with the child. I thought it had caught cold. My little girl took the child to the door with its arm exposed between the 13th and the 15th, after inspection. I called her twice from the door. When Dr. Guy came on the Sunday evening he did not order anything.

Dr. Guy came again on the Monday evening. The child was better on the Monday. On the Wednesday I thought the child was worse; the inflammation had spread across the chest to the right-hand side; the colour was about the same as the inflammation was which first came on the left arm, a kind of pinky red. The arm was swollen. I felt of it, and it was hard. I sent for Dr. Guy on the Wednesday, and he came soon afterwards. I do not remember if he said anything or gave me any medicine, but some day that week he gave me some medicine to be given to the child internally. I had sufficient lotion to last up to the death of the child, which took place on the 26th June. I think I knew the baby was suffering from erysipelas before seeing the certificate of death. When Mr. Bliss called I told him I thought the child had caught erysipelas from cold. He asked me if I did not think it strange. I said no, because I had heard of such things. He said the mother of the child from which my baby was vaccinated had erysipelas very bad at the time. He told me this twice over. By Wednesday night the inflammation had spread across the chest. I had no other medicine from Dr. Guy except what I have stated. A little time before the death the inflammation spread down to the legs. One little blister came up on the wrist. There was clear water in it. On the Friday night before death the child cried and pined a good deal. It did not shiver. I did not notice any convulsions during illness. It laid quiet and took no notice. Directly after death the left arm turned purple or blue. At the time it died the left arm turned a darker red. The other arm also turned dark. I did not look at the body. I have four children now alive. I have had none die except Alice Sophia. They are all nice, healthy, fine children. At the time of the baby's illness my husband was working for a market gardener. He has not ailed anything lately. Alice was not a weaker baby than the others. She was a finer baby than my others. My house is a clean house. Sometimes there are disagreeable smells from the tanyards. I did not notice any particular smells beyond the smell of the tanyard and the leather from the 1st to the 30th June. Sometimes the drains smell. The tanyards are a sickly smell.

Mr. *Henley*.] I have never had to call in medical advice in consequence of the smells. Dr. Guy attended me in my two last confinements.

Mr. *Cross*.] My husband and myself have never had anything the matter with us except colds. I thought the child had caught cold from being taken to the door. I cannot say when Mr. Bliss first called. He said my child had been vaccinated from an unhealthy child, and that the mother had erysipelas. I gave Mr. Bliss no information as to my child.

Mr. *Chittock*.] Mr. Bliss asked me if I had seen a letter of his in the "Argus." It was something about vaccination. I read the letter in the "Argus." A dark man came with him the first time. I do not know who he was. I told him I did not believe Dr. Guy had vaccinated my child from an unhealthy child. I do not know the mother of the child

child from which my child was vaccinated. I saw the lymph from the child's arm. A woman was nursing the baby on her knee whilst the lymph was taken from it. I did not notice any unhealthy appearance about the woman. I saw it was a nice healthy child. My child was vaccinated about 11 o'clock in the morning. There was no one there at the time who had brought a child for inspection from whom the lymph could be taken. The first woman that came did not look very healthy. Dr. Guy questioned her. He asked her if she and her husband was well. He also said your baby does not appear to be well, and she said it had been till that morning. He said you can sit down, and something to the effect that he should not want that baby. I had to wait until another baby was brought in for inspection. I believe my child was vaccinated from the next woman's baby that came in for inspection. I think that mine was the third baby vaccinated that morning. I feel confident my child was vaccinated from the first baby from whose arm lymph was taken that morning, because I had been waiting. When I first go to the station Mr. Thirkettle enters my name in a book, and on the morning I took the child for vaccination the names were called out in the order in which they stand in the book. I cannot say how many mothers were waiting with their babies for vaccination, but I believe several, three or four. I cannot say which were waiting for vaccination and which for inspection. The first woman who arrived at the station after me Dr. Guy said was not a suitable child for vaccination. Dr. Guy attended the child and supplied me with medicine and lotion. He made me no charge. I remained in the station after vaccination about ten minutes or a quarter of an hour. I waited in the same room as my child was vaccinated in. I do not remember any other child being vaccinated.

Dr. *Airy*.] From the beginning of June to 18th I received dressmaking work to do for Mrs. Taylor and Mrs. McKelvie, who are regular customers of mine; I know those families; I should be sure to know if there was any illness in those families; I am sure there was not.

Mr. *Grant*.] Mr. Bliss, when he called on me, said Dr. Guy had vaccinated my baby from an unhealthy child. I am sure this is what he said; he said the mother at that time had had erysipelas very bad.

Mr. *Henley*.] Dr. Guy never came to my house between the 6th June and the time the child was taken ill. The only times I saw Dr. Guy as to this case were on the 6th and 13th June; I had no communication with Dr. Guy in the meantime.

(signed) *F. S. Lambert.*

ANN BOAST, wife of JAMES BOAST, of Saint Martins-at-Oak, Norwich, shopkeeper,
says:—

Mr. *Grant*.] I know the last witness, Mrs. Lambert; I saw the baby Alice before it was vaccinated, and thought it was a nice baby. Mrs. Lambert comes into my house to make purchases; I never noticed anything the matter with the baby up to the time of vaccination; it looked a nice baby. I did not see anything the matter with the skin, nor any scab or rash on the head. It was kept perfectly nice and clean, and had all that a baby required, so far as I saw; the eyes were clear and bright; the vaccination took well. After vaccination Mrs. L. asked me to go in and look at the baby's arm; this would be after inspection. The left arm looked red; I said I thought baby had taken cold. I saw it several times after that; the inflammation got worse, and then a little better. I saw it shortly before death; the left arm was inflamed down to the wrist; the arm was swollen and rather hard; it was a kind of reddish pink, not very dark. After death the arm turned purple; the chest was also inflamed; I did not look at the right arm; I did not particularly notice the legs, but I think the legs were swollen when I dressed it after death. I have previously seen fatal cases like this after vaccination, many years ago, in the north of England, which Dr. Epps attributed to cold, and this caused me to suggest to Mrs. Lambert that the baby had taken cold. Mrs. Lambert's other children are all healthy.

Dr. *Airy*.] At that time I had not heard of any cases of erysipelas in my neighbourhood.

Mr. *Chittock*.] There was some wool on the child's arm.

(signed) *Ann Boast.*

I know the child Edith Johnson, No. 97; I am her grandmother. This child was vaccinated from Alice Lambert; no ill results whatever have followed vaccination; the child did well.

Dr. *Airy*.] I cannot say how many places arose in the arm, whether two or three; the child suffered no more than other children after vaccination; the child has been well up to this time.

(signed) *Ann Boast.*

WILLIAM GUY, of the City of Norwich, M.R.C.S., Public Vaccinator, says:—

Mr. *Grant*.] The distance from Lambert's to Tyler's is about one and a half miles, and from Threadkill's to Lambert's is about half a mile. Alice Lambert was brought to me on the Thursday evening, the 16th June. I have a special recollection of this case; the arm was inflamed below the vaccination mark from half an inch to an inch; the inflammation had not extended to the elbow; I then prescribed lotion of lead, the same as in Threadkill's case, and a dose of castor oil. On the Sunday evening I again saw the child; the inflammation had then extended some way down the arm; the colour was a bright red. I then formed an opinion that the child was suffering from erysipelas; that was Sunday, the 18th June; I considered it was acute erysipelas; I was aware then that Threadkill and Tyler were both suffering from erysipelas. These three cases of erysipelas happening between 14th and 18th June, did not suggest to me that there was anything wrong either with the vaccine lymph or my method of vaccination, or with the vaccinifers, nor did it suggest to me that I should suspend my vaccinations. On the Sunday there were no bullæ; I prescribed internal medicine, tincture of muriate of iron. Before the child died the inflammation spread down to the feet. Generally speaking, the appearances were the same as in Threadkill's and Tyler's cases, except there were not so many bullæ, the colour was not so deep, and the inflammation extended downwards and not upwards. I did not notice any redness or swelling above the vaccination marks. I prescribed medicated wool for the arm; I have formed no theory as to the cause of Lambert's death; I give no opinion as to whether death was caused by the child taking cold. I do not know Threadkill, No. 80, was vaccinated from Armes, 44; Armes from Sewell, 28; Lambert, 41, from Sewell, 28. Lambert, Threadkill, and Tyler all trace back to same vaccinifer, 28. Sewell vaccinated from Took, 17; Took from Beales, 472. The fact that Threadkill, Tyler, and Lambert, were all suffering from acute erysipelas of same type, and died about the same time, 25th and 26th June, being all traceable from Sewell, I consider to be a most remarkable fact. I express no opinion further than that. This fact must possibly suggest to an ordinary medical man some theory. In Lambert's case, I believe if the child had not been vaccinated erysipelas would not have supervened and followed. The same answers would apply to the cases of Threadkill and Tyler. That fact does not suggest anything to my mind as to cause of the erysipelas. I have no theory in my mind in Tyler and Lambert's cases as to cause of erysipelas. In Lambert's certificate I did not think it necessary to add erysipelas from vaccination. If I had any cases presenting precisely similar appearances to Tyler's case, I should have returned it as death from erysipelas. In similar cases I have not added the words "Erysipelas from Vaccination." In future, if I have cases similar to Threadkill's and Tyler's, I should state in the certificate that death arose from "Erysipelas after Vaccination."

Mr. *Cross*.] Sewell had a very good arm, and was healthy.

Mr. *Grant*.] I have no special recollection of Sewell's child.

Mr. *Cross*.] At the time the child Sewell was vaccinated and inspected, I cannot say whether I saw the mother. In my opinion a child may take erysipelas from cold where there is a wound.

Mr. *Chittock*.] If I thought the erysipelas arose from the vaccination, I should put in my certificate "Erysipelas from Vaccination," but if from any other cause I should not state this. If the erysipelas, in my opinion, did not directly arise from vaccination, I should not state in the certificate "Erysipelas after Vaccination." If erysipelas followed vaccination, and I had no theory as to the cause of it, I should then state "Erysipelas after Vaccination." The first entry for 6th June:—Cadywold, No. 39, vaccinated from No. 28; six children were vaccinated from No. 28, on that day. Their names are Lambert, Cadywold, Calver, Poll, Curtis, and Armes. I have not heard, nor had it suggested, that any ill effects arose to any of these children, except Lambert. Referring to 13th June, No. 97, Johnson, this child was vaccinated from No. 41, Lambert. I have heard of no ill effects to that child. Johnson was the only one vaccinated from Lambert. Referring to 13th June, I find no child was vaccinated from Cadywold, No. 39. There were three children vaccinated from Calver, viz., Kitson, Gayford, and Cornish. I have heard of no ill effects resulting from the vaccination in these three cases. Referring to Poll, No. 42, I find there were no children vaccinated from this child. I find there was one child vaccinated from Curtis, viz., No. 99, George Miller, Mill Hill, Catton. I have heard of no ill results following that vaccination. There were also no ill results following vaccination in Armes' case; four children were vaccinated from Armes. This exhausts all the cases vaccinated from Sewell, No. 28. So far as the child Armes is personally concerned no ill results followed vaccination. All these children were brought up for inspection, and I was therefore able to form an opinion as to their condition at that time. Referring to Sewell, No. 28, I find this child was vaccinated from Took, No. 17, on 30th May. On that day five children were vaccinated from Took. I have heard of no ill effects arising in any one of these five cases from vaccination. They were all cases of successful vaccination. In Lambert's case the inflammation appeared on the ninth day after vaccination, and in one of the other cases the inflammation appeared the same day as vaccination. Lambert's, however, was the same type of disease as the others. I should not think that in the same type of cases inflammation would break out in one case on the same day

as vaccination, and be retarded nine days in the other case. I can form no opinion about it. I did not know Mrs. Sewell at the time her child was vaccinated. There was no appearance of disease about the woman who brought the child No 28. I make it a general practice to look at the persons bringing children for vaccination. Unless the woman who brought the child Sewell for vaccination presented a healthy appearance I should not have taken the lymph from the child's arm. If infected matter had been introduced into Lambert's arm at time of vaccination, the disease would show itself in from one to eight days, but I don't actually know. I cannot say if I used the same lancet to each of the six children vaccinated from No. 28. I use the same points more than once on the same day after being properly cleaned. Generally two points are used for each vaccination. I cannot say if the same points were used in more cases than one out of these six.

Mr. Grant.] As to children and mothers, I say generally that I would not vaccinate a child if I had seen anything unhealthy in the mother or vaccinifer. I have no special recollection of these particular cases. I have attended Mrs. Lambert in her last confinement, and there was nothing special about it. The house she lives in is a fairly clean one. I saw nothing in the house, or the woman, or the family tending to indicate liability to disease.

(signed) William Guy.

MARY ELBECK says:—

I AM the mother of the child Alice Sewell. Before vaccination the baby was in good health. It did not suffer from anything, nor has it suffered from anything since vaccination. From 1st May to end of June I did not work anywhere, but was at home. That was my first confinement. There was no special trouble about it.

Mr. Chittock.] I was healthy and well myself. I took the child to the vaccination station to be vaccinated, and I also took it for inspection.

Dr. Airy.] I remember one or two children being vaccinated from mine. I did not know any of them.

Mr. Grant.] Dr. Guy asked me if I was well, and if the father of the child was well, and I said yes.

Dr. Airy.] Dr. Guy used a small knife to vaccinate.

Mr. Chittock.] I cannot say how many marks arose on the child's arm.

(signed) Marie Elbeck.

MARIA SEWELL, wife of William Sewell, of City-road, New Lakenham, gardener, says:—

Mr. Grant.] I am the grandmother of Alice Sewell, and the mother of James Sewell. My son was not married to Mary Elbeck. He is now in Chatham Prison. He was convicted at the Assizes here; I do not know what for. He was tried on 6th August 1881. My son was always in good health, and never a blotch about him.

Mr. Chittock.] I am continually seeing the baby. It was with me. It has always been in good health. There were four vesicles rose after vaccination, three being fuller than the fourth.

Mr. Grant.] There was a little rash appeared about four days to a week after the inspection. She had no rash before that. The rash was on the left arm, and also on the face.

Dr. Airy.] None of my family on either side ever had erysipelas.

Mr. Henley.] I went to Mr. Wilson, the chemist, for some drops, and told him the child had a nasty rash, and he said, "Has the child been vaccinated?" I said "Yes." and he said, "Oh, that's nothing; its better out than in. It has got a cold." The rash kept coming for a day or two, and then going. I am not sure there is not some now under her chin. The chemist gave me nothing for this rash.

Mr. Grant.] There was a sore on the lip which I think was caused by the feeding-bottle. It can hardly be called a sore; it is there now. There is a little rash on the baby's arm.

Mr. Henley.] I am perfectly sure the child had no rash before vaccination. I always washed the child myself before vaccination, and must have seen a rash if there had been one before vaccination. I am perfectly sure there was no rash until about four days or a week after inspection.

Mr. *Henley*.] The child was a fortnight under three months old when it was vaccinated.
 Mr. *Grant*.] I do not know of any erysipelas in my neighbourhood. It is a healthy neighbourhood.

Mr. *Cross*.] I live at No. 4, Doman's-buildings, City-road.

(signed) *Maria Sewell*.

Note.—The father of this child, James Sewell, was convicted at the Norwich Assizes, 6th August 1881, of highway robbery and attempted rape. He was not suffering from any venereal disease so far as the prison books show, and from the knowledge of the prison officials of him. He had no venereal medicine upon him while in the prison.

COLISON'S CASE.

LUCY COLISON, wife of George Colison, of Baker's-yard, Waterloo-road, New Catton ; bricklayer's labourer, says:—

Mr. *Grant*.] I HAVE had six children, four of whom are alive ; one of the other two died from convulsions a fortnight after birth. With regard to the other child it was in good health up to the time of vaccination. It did not suffer from anything. There was nothing the matter with the skin, which was quite fair. The eyes were bright. There was no scab on the head or behind the ears. I took the baby to be vaccinated on 13th June. I took the child's pelisse and cloak off, but not the dress. Dr. Guy said I need not take the dress off as he could lift that up. I also took the hood up. The sleeve was tied up. Dr. Guy did not ask me whether I had been well. He said nothing except as to the sleeve and cape. He did not ask me if my husband or the child was well. Dr. Guy had not attended me before this. He vaccinated my other children. It was five years previously that my last child was vaccinated. I did not see the baby my child was vaccinated from. After vaccination I stayed a few minutes. The arm bled a good deal more than any of my other children's ever did.

Mr. *Henley*.] I cannot say why it bled more in this case. The scratches were larger.

Mr. *Grant*.] Three pimples showed slightly on the Friday ; I took the child up for examination on the 20th June ; there were three places, small, yellow, fester-like, not like those on my other children ; the pimples were not so big as the others ; in this case they were a nasty yellow corruption. Up to this time there had been nothing the matter with the baby but the arm. On the day of inspection I told Dr. Guy I did not think he ought to touch the places, but he touched them with three bones ; I did not see if he vaccinated any other child from it ; on the day of inspection I got to the station at about 11 o'clock ; I first noticed the child being ill on the Wednesday week following vaccination. The child cried when I touched her, and seemed sore all over, and cried, and so I did not dress her. The arm was not swollen ; she did not swell until the following week ; during that week she slept very much in her cradle. I did not see that she shivered at all that week ; she was unusually sleepy, and cried when nursed. On Tuesday, 27th, the child shivered, and on the 28th the body began to swell. I did not notice any convulsions. On the 28th the body turned a strawberry colour ; the body was swelled and quite hard. This strawberry colour seemed to be under the skin ; it was all red alike down the left side ; the vaccine pimples had gone down, and there was no proper head formed on the arm but a dry dark skin. The arm itself was not swollen. The arm turned white. The redness at this time was confined to the left side of the body. Up to this time I had not sent for anybody ; I first sent for a doctor on the 29th June. I sent for Dr. Guy. Dr. Guy came down the same evening, about 9 o'clock. When Dr. Guy came the baby looked very bad, the red colour had spread all over the body. He felt the baby's body, and said he did not know the meaning of the swelling ; he told me to put a warm linseed poultice on the body, and get to bed with it as quickly as possible ; he also told me to give it some castor oil, which I did, in his presence ; I fetched the castor oil while he stopped, and gave it to the child. Dr. Guy did not come any more. I am sure of this. On this Thursday night the castor oil had passed, and when I moved her she shrieked. I gave her nothing but the breast up to the time she died. Dr. Guy was in the house altogether about a quarter of an hour on the Thursday evening ; during this quarter of an hour the baby was asleep, woke when I gave it castor oil, then went to sleep again, cried when I disturbed her ; she was asleep all the time Dr. Guy was there, except when I gave her the oil ; after taking the castor oil she went to sleep and did not wake up whilst Dr. Guy remained in the house. She did not cough ; she remained in this state untill the following Tuesday. The body got darker and very hard. I put a fresh linseed poultice on every 10 minutes from the day Dr. Guy called, on the 29th June, up to the child's death. I put no poultices on at night, as she cried. She had a poultice on at night, but I did not change it. From the Friday to the Tuesday I noticed no special change in child ; on Sunday I gave it milk and brandy. Nothing else except breast. Put nothing on body except linseed poultice ; on Tuesday body got much darker and hard. Child slept a good deal, and the left leg swelled ; the left arm did not swell ; the face was a proper colour ;

the

the bowels were same as usual; same colour as usual; the left side got very dark; I did not notice any coughing or spitting up anything; there was nothing in the child's face which showed it had been coughing; the child had no fit of coughing at all. On the Thursday Dr. Guy said the child had a little bronchitis; I said I did not think so; he said I did not want to run away with the idea that the child would die through vaccination; I had read of other deaths from vaccination, but I did not tell Dr. Guy anything about it. On the Thursday evening, when I went to Dr. Guy's for medicine, I told him my husband thought the child would not live; Dr. Guy said, "Very likely not." I said, "I did not like to lose her." He did not say anything. On the Tuesday morning, 4th July, I went to Dr. Guy's for a certificate; there were some people waiting for vaccination. I asked him for a certificate for my baby. He said, "What's your name?" I told him. He said, "What! is your baby dead?" I said, "Yes." He said, "Come between two and three in the afternoon, I am busy." I went again in the afternoon; I saw Mrs. Guy, and told her what I had come for; she said she knew all about it; she wrote the certificate out in my presence, then took it into another room, and then brought it to me. She asked me how many children I had, and when I told her she said I could spare it. I cannot read. I took the certificate to the wrong registration office the next morning; I then took it to Mr. Turner's; I showed the certificate to my husband on the Tuesday night.

Mr. *Henley*.] Until my husband read the certificate I did not know the cause of death was stated as bronchitis.

Mr. *Grant*.] I did not say anything to the registrar about bronchitis; I have never had any bronchitis or erysipelas about me; I have seen children suffering from bronchitis; I do not think my baby had bronchitis; it did not cough from its birth, nor choke, nor breathe badly. Mrs. Starling, a neighbour, came in; one of her children died from bronchitis. None of my other children have had bronchitis; they are healthy children; I have not heard of any children or persons in my neighbourhood having bronchitis or erysipelas during the time my baby was ill. Lambert lived about a mile from me. Union-street and St. Swithin's-terrace are further off than that. I made no difference in the child's clothes; it slept in a basinet which stood in the same place as it always had done before vaccination. I do not go out to work.

Mr. *Henley*.] Dr. Guy did not sound the child; he put his hand on the child's belly.

30th August 1882.

COLISON'S CASE.

LUCY COLISON, re-called, said:—

Mr. *Cross*.] DR. GUY called at my house and told me my child had a slight attack of bronchitis. I did not think the child died from bronchitis, although I had heard Dr. Guy say it had this complaint. I have seen cases of bronchitis. My child breathed freely and slept very nicely. The poultices were put on to the lower part of the body where it was hard. My husband read the paper to me as to deaths from vaccination. I do not know the child from whom mine was vaccinated.

Mr. *Chittock*.] I was about the first person at the vaccination station. There were a great number of persons came in before my turn came; several went in before me; mine was not the first baby vaccinated. When I went into the vaccination room there were several women with children in the room; I took the child's hood off as I knew Dr. Guy would require this. He cut the child's arm with a knife like, and then he used the bones. I did not look at the child's arm during vaccination as the child shrieked. I was trying to give it the breast. I cannot say whether Dr. Guy touched any other child's arm with the bones before mine; I was not paying much regard. He might have touched another child's arm before vaccinating mine without my noticing it. Mrs. Threadkill was in the vaccinator's room before me, and I believe she was in the room during my child's vaccination. I cannot say how long before me Mrs. Threadkill was called into the room. I cannot say whether Mrs. Threadkill or myself left the vaccination room first; my child was wearing a short dress. I remained in the room about 10 minutes after vaccination I suppose, to allow the blood to dry. I had waited until the blood dried on previous occasions. When I took the child for inspection Dr. Guy touched the places with some bones. I believe there were other children in the room at this time, but I cannot say if any were vaccinated from my child. I know the appearance lymph ought to present. On previous occasions Dr. Guy has taken lymph from my children's arm. It looked like corruption. In this last case he lanced the arm, but nothing scarcely came out. On other occasions the lymph was whiter than that taken from this baby's arm. At the time of the inspection I saw no ring round the place, but there were nasty little yellow spots. They had not risen up much. I told Dr. Guy not to touch the places as I did not think they had risen sufficiently to take anything from the arm. When Dr. Guy

touched the arm a little yellow stuff came out. Before I took the child for inspection I did not notice the arm was very sore. It did not cry when I touched the arm. I told Dr. Guy not to disturb the arm, as I thought the places had not rose enough. This took place in the vaccination room. I cannot say whether anyone else heard what I said. No one else said anything about it. Afterwards the child only cried when touched. I never saw anything on the arm afterwards as the places went down. Up to the time of the child's death the arm never inflamed. The places went down and the arm turned white. There were not at any time any blisters on the child. Dr. Guy came on the evening of the 29th. He put his hand on the child's body. I saw him do this. He said the child had bronchitis before he felt of the baby's body. I asked him to look at the child, and he put his hand on the body. Dr. Guy sat down a minute or two beside the child, and then said it was suffering from a slight attack of bronchitis. I had not given the child any drops. It had nothing but the breast from its birth. I have seen previous cases of bronchitis in babies. Up to the time of my confinement and vaccination I had ailed nothing except from natural causes, and my husband had been in good health during that time also. New Catton is a fairly healthy place. I never heard any complaints about it. The child had ailed nothing up to the time of vaccination, and looked healthy and well when taken for vaccination. During the week between vaccination and inspection it was well. There seemed to be no difference in the child until after inspection. I first observed a difference on the Wednesday morning after inspection, when I moved it. I then first noticed the child was sore. I first observed shivering on the 27th June.

Dr. *Airy*.] No other medical man saw the child, Mrs. Starling saw it. The child did not breathe hard at any time during illness.

Mr. *Henley*.] I have no complaint to make as to Dr. Guy's treatment of my child during vaccination. I do not think he ought to have touched the arm when I took it for inspection. I did not think the child's arm was in a fit state.

Mr. *Grant*.] I did not think taking the lymph from the baby would do it any harm, but did not think it was in a fit state.

The mark + of *Lucy Colison*.

J. J. Henley.

WILLIAM GUY, of the City of Norwich, Public Vaccinator, says:—

Dr. *Airy*.] I have no particular recollection of the vaccination nor of the inspection of the child Maudie Colison. I do not remember Mrs. Colison coming one day to speak about the child. I remember receiving a message on Thursday, 29th June, to go and see the child. I went there about nine o'clock p.m. The room was light; a lamp was burning. The child was breathing quickly; the skin was hot and feverish. My attention was drawn to the body, and I saw some slight redness on left side, and the body was slightly swollen but able to be pressed upon without sign of pain. This redness extended from about 2½ inches below the left axilla to about half way down left side of body longitudinally. I felt the body where the redness was; the body hard and tense all over. I did not distinguish any difference between the parts which were red and any other parts; I did not notice any flinching when any particular part was touched; I saw nothing on right thigh.

Mr. *Grant*.] I examined the right thigh.

Dr. *Airy*.] This appearance did not seem to me to be of nature of erysipelas. It was a light red, as though child had been laying on its side. The tenseness of the skin about the body did not appear to me to be natural. I did not attribute this tenseness to anything, but thought at the time the child had a violent cold. I examined chest with hand simply. I perceived râles all over the chest. I made no other examination by percussion. There was no wheezing. I felt sure, by my examination of child's chest, it had bronchitis. I ordered castor oil, body to be poulticed (linseed), and mixture. Poultice to be applied over abdomen, not chest. The medicine was compound tincture of camphor and a few drops of sweet spirits of nitre, compound spirits of ammonia flavoured with orange (*bottle with remains of mixture produced*). I sometimes give this medicine in cases of bronchitis. The child was too weak for stronger medicine. I did not see the child again before its death. I expected I should have been sent for, as they were not regular patients of mine. I saw nothing about locality or family likely to cause erysipelas. I remember Mrs. Colison coming for death certificate on 4th July; she first came during vaccination hours, and I told her to come again between two and three. She came again in afternoon, but I did not see her. She did not tell me anything in the morning.

Mr. *Grant*.] Before seeing Colison's case I had seen Threadkill, Tyler, and Lambert. Those latter were undoubted cases of erysipelas; they were characterised by tension, hardness, and redness. In Colison's case there was a certain amount of tension all over body, and hardness. I did not think that Colison was suffering from erysipelas at the time; I looked at the child and said it had got bronchitis. I said this before I put my hand

hand on the child. Neither the mother nor any one else in room said they did not think it was bronchitis; I am quite sure of this. I thought the child had bronchitis principally from the breathing, and also from febrile state of child; from nothing else. I ascertained febrile state of child from examination. I do not consider a poultice on the abdomen a proper treatment for bronchitis. I still attribute the child's death to bronchitis.

Mr. *Cross*.] There would not necessarily be any discolouration of skin of chest in cases of bronchitis; in some cases it would be so.

Mr. *Chittock*.] I ordered the poultice on abdomen in consequence of hardness of abdomen. I treated child for bronchitis in addition to that. When the mother called on me for certificate in the morning she told me nothing as to the course of the disease, and I had therefore no reason to alter my opinion that the child suffered from bronchitis, and that that was cause of death. The lymph in Colison's case was taken from No. 54, Marriott. I am able positively to say that in Colison's case I used all proper precautions to take lymph from healthy subjects, although I have no special recollection as to this case. There were three children vaccinated from Marriott, viz., Reeve, 67, Colison, 71, and Newman, 68. I have heard of no ill effects resulting from vaccination in the cases of Nos. 67 and 68. Marriott was vaccinated from 35, Franklin. Seven children were vaccinated from No. 35. Referring to my register, I find that all seven are entered as successful. I have heard of no ill results following vaccination in any of these seven cases. Referring to register, I find I vaccinated one child only from Colison, viz., Byles, No. 104, which is marked in register as successful. I heard Mrs. Colison's evidence as to condition of lymph obtained from her child's arm. It would have been impossible for me to have made use of such lymph. Byles was the only case vaccinated from Colison, and that was a successful one. On the 27th June, when Byles came up for examination, I used Government calf lymph, which may account for no one being vaccinated from Byles.

Mr. *Grant*.] On the 27th June, in addition to Government calf lymph, I had six vaccinifers. I select the best cases for vaccinifers. The remainder may be equally as good, but I might not require them. When Mrs. Colison first came for certificate, I did not put any questions to her as to progress of disease. Since I knew this inquiry was to take place, I have made no independent inquiry as to the health of vaccinated children after eighth day, but I have made independent inquiry as to the vaccinifers. Sewell and Armes are the only two vaccinifers I saw. After hearing the evidence in Colison's case, I still think the child died from bronchitis, but not so strongly as when I visited the child on the Thursday. There were a good many complications in the case, but I still think the cause of death was bronchitis, complicated by erysipelas. I am still of opinion that the bronchitis continued to death. A child might die from bronchitis without coughing or raising phlegm.

Mr. *Henley*.] The symptoms I observed down the side and stomach were not consistent with bronchitis. The symptoms described by the mother in her evidence are not consistent with bronchitis, but point to erysipelas; but bronchitis might exist at the same time. (*Extract read from Mrs. Starling's evidence.*) That points to erysipelas.

Mr. *Grant*.] The cough is not an essential feature of bronchitis. (*Extract from Dr. Walsh's book on bronchitis read.*) They are general symptoms.

Mr. *Chittock*.] A child might have bronchitis in addition to some other disease at the same time.

Mr. *Henley*.] Redness, tension, and hardness are not symptoms of bronchitis.

(signed) *Wm. Guy.*

ELIZABETH, wife of THOMAS STARLING, of Baker's-yard, Waterloo-road, Norwich, Brickmaker, says:—

Mr. *Grant*.] I saw Mrs. Colison's baby from its birth. I saw it after vaccination. I saw it every day, as I live in the same yard. I saw it after it had been taken up for examination, and from then until its death. I saw the baby the Wednesday after inspection; it felt sore. I told Mrs. Colison I would not dress it, as it cried a good deal. There was nothing on the body on the Wednesday. I was up with Mrs. Colison all the night it died. It was restless all night. There was nothing on the chest. It neither coughed nor raised anything. It was of a strawberry colour across the body and down the left side. The body was hard. I have nursed my own child for bronchitis. He laid a fortnight. My little boy was dark across the chest. In this case there was no coughing, no raising, and none of the symptoms of bronchitis, as exhibited by my baby. I never saw a case like this before.

Mr. *Henley*.] A poultice was put on the child's body.

Dr. *Airy*.] This strawberry colour first came down the left side, from about the level of the left breast, from under the left arm, and across the lower part of the body, just touching the right leg; the highest point just under arm. The colour never touched the chest. I did not notice if the back of the child became discoloured. Mrs. Drew laid out the body after death.

Mr. *Cross*.] I have never heard of any disease in our district. The slops are poured down at the door, and run down underground into the common sewer. I have never heard any complaints as to defective drainage.

Mr. *Chittock*.] I have seen Mrs. Colison many times since the child's death; I have not had any conversation as to the child with her. If I stated just now that I had talked over the matter with Mrs. Colison, I did not notice the words I said. I last saw Mrs. Colison this morning. I was there yesterday morning. I was at home last night. I did not talk to her about this case. I have come with Mrs. Colison here every morning. We have not brought the matter up. I have never had any conversation with Mrs. Colison as to the appearances which the child presented. I stated the child did not cough or raise, because I did not notice it do so. I did not say this because Dr. Guy had said the child had bronchitis. I was in the house when Dr. Guy came on the Thursday evening; heard him say it had a slight touch of bronchitis. Dr. Guy sat down on a chair, and leaned over and looked at the child for a minute or two, and then said it was a slight attack of bronchitis. This was before Mrs. Colison had mentioned the state of the child's body. I do not remember saying anything about the bronchitis whilst Dr. Guy was in the house. Mrs. Colison fetched the castor oil. Both myself and Mrs. Colison remained in the room with Dr. Guy. I saw the mixture prescribed for child. The mother gave it to child. I did not smell or taste of the mixture.

Mr. *Grant*.] I cannot read. I heard Mr. Colison read the certificate of death from bronchitis in the evening.

Elizabeth × Starling's mark.
J. J. Henley.

HARVEY'S CASE.

MARY ANN HARVEY, wife of EDWARD ELLIS HARVEY, of Bull-road,
St. Paul's, Norwich, Shoemaker, says :—

Mr. *Grant*.] I took my baby to be vaccinated on 13th June last; Dr. Guy asked me no questions about the child; I took the clothes off the child's left arm before sitting near Dr. Guy; I also took the shawl off head; the arm bled very much; I have had six children who have all been vaccinated; this one's arm bled more than my other five children. About four or five days after vaccination I noticed a lot of little bumps like white blisters all over; nothing rose on the arm which had been cut for vaccination. I went to the vaccination station a week after vaccination for inspection; the child had then little white blisters all over the arm and body. Bar these blisters, the child had been all right during the week; I showed the baby to Dr. Guy, who looked at it, gave me a card, and told me to come in a month's time. I said nothing to Dr. Guy; he said the baby was not well enough to do any more; he did not tell me to do anything to it; I then took it home. I had done nothing to the baby from the time of vaccination up to the time of inspection; it had taken the breast and nothing else. After the examination day the head began to break out; I took it to Mr. Lyddon about three weeks after the inspection. From time of inspection to time I took it to Dr. Lyddon, I done nothing to it; I did not show it to my neighbours; my husband saw it; my mother also saw it before taking it to Dr. Lyddon; he did not tell me to do anything. When I took it to Dr. Lyddon it was very bad; the white spots spread all over the arms, body, and legs; they were about as big as a pin's head; the inside of the pimple was prickly; they first came up white and then turned red; on the head they burst; they are now getting better; they had burst on the head when Dr. Lyddon saw them; he gave me some ointment. My husband subscribes to Dr. Lyddon's institute; Dr. Lyddon looked at the baby and asked what the complaint was from, and I said vaccination; he said the vaccination had turned inwardly, and had putrified the blood. I told him how the sores had come up, and as to their bursting on the head; he looked at the head and gave me some white salve in a box, and medicine for the baby to take internally. Dr. Lyddon has been treating the baby since, and it is now getting better. I have been about twice to Dr. Lyddon's, and he has been to my house about twice. The white spots first came out on the child's left arm after vaccination, and next appeared on the back. There was no sickness in my family before the vaccination, nor had I heard of any erysipelas in my neighbourhood. I have had no illness since my marriage, nor my husband either; I have had one child died at the age of 10 months; I do not know cause of death; all my other children are now in good health. The baby was quite well before vaccination; since vaccination the places have itched very much, and the child has been gradually wasting; it was fatter when vaccinated than it is now. I took the child to Dr. Guy's a month after inspection, and after Dr. Lyddon had seen it; he said it was not vaccinated at all; that was an old woman's rockstaff. Dr. Guy did not say anything else, and I then left. I have not been to Dr. Guy since, nor has he since seen the baby. I did not see any more of the places on the arm after the blood was off. All my children failed after vaccination, but had no sore places about them; they do not grow, but lose their strength. I have never had any special trouble or miscarriages in my confinements.

Mr. *Henley*.] All my children were vaccinated about the same age; I always take them when they are about three or four weeks old. None of my other children have had bad heads when teething.

Dr.

Dr. Airy.] There was no swelling of any part of the body during the eruption, nor any large blisters; my other children are in good health, and have good teeth. I cannot say if I have ever had small-pox myself; I have never had any eruption about my face to my knowledge.

Mr. Cross.] My child had ailed nothing from the time of birth to time of vaccination; neither my husband nor myself, nor any of my children have ever had any eruptions. All my children were affected by vaccination until they were about two years old; the child from which mine was vaccinated looked a nice child, but I did not take much notice of it; I have noticed nothing about the child after vaccination except the blisters; there was no discolouration of the skin.

Mr. Grant.] Dr. Guy used a little knife to cut the child's arm, and then took some little quills and dabbed the arm. I have never seen any cases of small-pox.

Mr. Chittock.] So long as I can recollect I have had no disease causing eruptions; I did not see the quills applied to a child's arm and then to mine. I asked Mr. Guy to let my child be vaccinated from that child, as it looked such a nice baby. On other occasions I had previously chosen a baby for mine to be vaccinated from; I was satisfied with the appearance of this child, which was the first I looked at; my child was in long clothes. I remained in the room after vaccination about half an hour, as Dr. Guy told me to wait until the blood had dried. I do not know Mrs. Threadkill nor any of the women I saw at the vaccination station. I cannot say if mine was first child vaccinated from child I selected; I did not notice Dr. Guy prick that child's arm; I did not see him vaccinate any other child from it but mine. I have frequently heard the expression "an old woman's rockstaff" before. I do not know what it means; I suppose it means an old woman's tale to which no attention need be paid. I cannot read.

Mary Ann Harvey's + mark.

J. J. Henley.

MATILDA COAN, Wife of STEPHEN COAN, of Globe-street, Union-place,
Norwich, Shoemaker, says:—

Mr. Grant.] I took my child, Herbert, to the vaccination station on the 13th June; I stripped the child's arm, and took the hood off; Dr. Guy told me to get the arm ready; I do not remember his saying anything else; I looked at the child mine was vaccinated from; it seemed to be a nice child. It was a day or two after vaccination that the heads of the places came up very small, and showed a little; the child was quite well at that time. I did not take the child up for inspection, as I saw Dr. Guy in the street in the same week as vaccination, and showed him the child, and he said the vaccination had not stood, and he told me to come the following Tuesday. I told Dr. Guy my husband and myself were very much unsettled about Mrs. Tyler's baby, and that we would rather wait. He said we need not go down, but that he would speak to Mr. Thirkettle. When I showed Dr. Guy the child's arm in the street, one head was brown and small, and the other three were only scratches. There was nothing the matter with the baby's head. It has since been successfully vaccinated.

Mr. Chittock.] I believe my child was vaccinated from same as Tyler's. I went with Mrs. Tyler to vaccination station; there was one child vaccinated between mine and hers; mine was vaccinated before Mrs. Tyler's; I do not know who the child was who was vaccinated between Mrs. Tyler's and mine. I saw Mrs. Harvey at vaccination station.

Mr. Grant.] Dr. Guy said when the child went up a second time for vaccination, that, after what had happened, he was glad it did not stand the first time.

(signed) *Matilda Coan.*

Note.—Herbert Coan appears in the Vaccination Register as successfully vaccinated on 18th July 1882. The number against the name is 227.

HARVEY'S CASE.

JOHN HENRY LYDDON of the City of Norwich, M.R.C.S.I., L.S.A.

Mr. Grant.] I remember Mrs. Harvey bringing her baby to me some time early in June last. The baby had eczematous scabs on the head, and a rash on the body; also a papular eruption. I think I examined the arms; I think Mrs. Harvey said it was caused by vaccination. I cannot remember if I replied to her. I might have said the vaccination had turned inwardly; but I should not have said that vaccination had putrified the blood. They were not open sores on the head, but were covered with a scab. I prescribed zinc ointment and salines. Salines would be a first treatment for any eruptions.

I have seen the child three or four times. I last saw the child last Sunday at the mother's house. I have looked at the child now. It is very much better than when I first saw it. There has been a gradual improvement. There are still slight remains of eczematous scab. The hair is gone from the front part of the head as far as the coronal suture. There are still slight remains of an eruption about the body now. There are no vaccination scars. The hair which remains is hardly in a healthy state. It is growing scantily on the rest of the head. I have no theory as to the cause of these scabs and eruptions. The facts of the previous deaths of children vaccinated from same vacciner as this child does not suggest any theory to my mind as to the cause of the disease in the child Harvey, because in this latter case the vaccination had not taken. If it had, it would have helped me. Eczema is often the consequence of vaccination. The papular eruption might have been caused by poison in the lymph. If blood is drawn from vesicle, disease can be communicated at time of vaccination. I know Mrs. Harvey's family. They are strong healthy children now. I treated one for diarrhoea. My institute practice is principally amongst artisan classes. There are about 5,000 or 6,000 men and their wives and children, representing about 10,000 or 11,000 persons. During last June there was more than the usual number of erysipelas cases; I should not think they were epidemical. I should say there were about half-a-dozen cases dotted about Norwich. I have never seen anything in Mrs. Harvey's house or family which was likely to cause these papular eruptions. I should not call Harvey's case a dangerous one. It was more than ordinary.

Dr. *Airy*.] I do not remember if there was anything of erysipelas about the child or anything likely to run into erysipelas. I could detect nothing of a specific nature in the child's complaint. I do not remember attending any other member of the family for any complaint after vaccination. They are now in good health, with the exception of the last. I do not consider there was anything infectious or contagious in the disease.

Mr. *Grant*.] I will not say it was not inoculable.

Dr. *Airy*.] I do not think I attended the woman in her confinement.

Mr. *Henley*.] In cases of eczema, I inquire of the parents as to the condition of the house and drains. These eruptions might be caused by bad drainage, dirt, bad air, overcrowding, bad food, small wounds, or scratches. I cannot remember a case in which the disease was communicated from another child.

Dr. *Airy*.] These causes would operate independently of the constitution, although a weak constitution would be more susceptible.

Mr. *Grant*.] A disease of this kind might by possibility turn into erysipelas.

Mr. *Henley*.] There is nothing cognate between eczema and erysipelas. They are not the same type of disease. I should not expect to see in the case of two children vaccinated from same vacciner, one to develop eczema, and the other erysipelas. I do not remember in my own practice a case of eczema turning into erysipelas.

Mr. *Grant*.] At one time the child was what an ordinary person would call covered over with eruptions.

Mr. *Henley*.] I cannot connect the condition of the child when it was brought to me with what happened at the vaccination station. I would not like to say that the unsuccessful vaccination of the child had anything to do with developing eczema.

Mr. *Cross*.] It is a common thing for children who have not been vaccinated to suffer from eczema.

Mr. *Chittock*.] The formation of vesicles might be prevented if the child suffered from eczema. If a child is prone to eczema, vaccination might not take effect.

Mr. *Grant*.] I have seen as bad cases as this from the causes enumerated by me.

(signed) *John Henry Lyddon.*

ELIZABETH, Wife of WILLIAM MARRIOTT, of Queen Hungary Yard, Norwich,
Moulder, says:—

Mr. *Grant*.] I remember taking my baby to be vaccinated in June last. I stripped the child's arm. Dr. Guy said I need not be afraid of having it done from the one I did. It looked a nice healthy baby; and mine has done well; four places came up. When I went up for inspection Dr. Guy asked me no questions. He vaccinated two babies from mine. My baby has been in good health ever since. There has been no sickness in my neighbourhood, and I have been quite well. I have never had bronchitis, nor has my husband to my knowledge. I have been married about 13 years. My youngest baby is aged eight months. It is quite well except having the whooping cough. It has had no other complaint. About the third day after vaccination the arm got inflamed, and after inspection the inflammation spread up to the shoulder, running nearly down to the elbow. After I had shown Dr. Guy the arm, I put poultices on. On the inspection it was not more inflamed than it is usual for such arms to be. The inflammation had not got up to the shoulder then. It began to get more inflamed, and the day before I put anything on it the inflammation had spread nearly to the shoulder. The arm was very red. I did not notice if it was swollen. I touched it with my finger and felt it hard. This hardness was only round the places. I put a cold bread poultice on the day after inspection. This seemed to draw some of the inflammation out. I put a castor-oil rag on after
the

the bread poultice, and I think it was on the same day. I put two or three poultices on, changing them when they got dry. After taking a poultice off I would put a castor-oil rag on; and sometimes I would put two poultices on in succession. I continued doing this until the following Monday or Tuesday. Sometimes I put on some cream. I usually put about three or four poultices on a day. The inflammation and hardness went away after a week of this treatment. I have had five children and always treat them in this manner after vaccination. The arms of the other children after vaccination were similar to this.

Mr. *Cross*.] I did not poultice the arm on the advice of a medical man, but because I always do it. I may have been advised to do it in the first instance, but not by a doctor.

Mr. *Chittock*.] I never use these poultices until after inspection. I did not observe anything in the appearance of this child's arm, after vaccination, more than I expected. The child was in short clothes when I took it for inspection.

(signed) *Elizabeth Marriott.*

WILLIAM GUY, of the City of Norwich, Public Vaccinator, says :—

Mr. *Grant*.] I remember the child Harvey coming up for examination on 20th June; I examined the child; I noticed a little papular eruption over the arms. I do not recollect if there were any on the head or body. I did not examine the body. The places were not larger than I should describe as papular. I did not notice anything peculiar in the appearance. I did not wish to run any risk in vaccinating the child then, and therefore postponed it. When the mother brought the child afterwards, she said it had not been well since vaccination. I said it has not been vaccinated, as the first was an unsuccessful vaccination. It was postponed, and cannot be that. I never heard the expression, "An old woman's rockstaff" before, and did not use it to Mrs. Harvey. She told me the child had been seen by Dr. Lyddon. Therefore I did not examine nor look at the child. I do not know the date she called. I am totally unable to describe the appearance of the child when it was brought to me, as I did not look at it. There would be no further entry in that particular book (*produced*) except "postponed." If he was brought up afterwards he would be entered as a fresh subject for vaccination. I do not think Bull-road is near the addresses of the other cases.

Mr. *Cross*.] I have frequently seen cases of eruption, as described by Mrs. Harvey, in children of the same age. I have often seen it in cases where there has been no vaccination.

Dr. *Airy*.] I had rather call it an eruption without describing it as papular or vesicular.

(signed) *William Guy.*

31st AUGUST 1882.

BROWN'S CASE.

SARAH, the Wife of FRED. BROWN, Short Queen-street, Norwich, Smith, says :—

Mr. *Grant*.] I TOOK my baby to vaccination station on 13th June last; I took the baby's pelisse off, but not the sleeve, as that was tied up. The arm simply was seen. I do not remember if Dr. Guy said anything. He did not ask me if my husband, myself or baby had been ill, or what part of town I lived. He cut the baby's arm with a sharp bright thing. After cutting the arm he touched it with a white bone. The arm did not bleed much, about the same as my other children's. After vaccination Dr. Guy said I must let it get dry. After the blood had dried I took it home. The baby was all right up to the following Tuesday week. On the Tuesday, 20th June, when I took the child for inspection, it was doing nicely; four heads had come up on the left arm. Dr. Guy took five or six of the little white bone things full of lymph from the arm. When taking lymph from the arm Dr. Guy said, "It is a healthy child." He did not say anything else. I first noticed something the matter on the Tuesday following inspection, the 27th June. The arm was swollen and hard, and red quite down to the elbow. The heads rose up and burst, and the stuff ran down the arm. The top of the elbow was swollen and looked as if it was bursting. It was cracked and stuff was coming from it. There was no inflammation but at the top of the shoulder and round the vaccination marks. It was reddened and hardened from top of shoulder to elbow all round the arm. Small places broke out on the left side of the chest. The hardness went all round the top of the

the left arm. I did nothing to the baby on the Tuesday, as I went out all day, and on returning in the evening the child's arm was covered with blisters from shoulder to wrist. The blisters were larger than a pea and were white when they first appeared, and were filled with what looked like water. About three days afterwards they turned yellow. The child cried nearly all the Tuesday night. On the Wednesday morning I took the child to Dr. Lyddon at the Institute. Dr. Lyddon gave me a box of ointment, but said he would not give me any medicine, as he had not vaccinated the child. I told him where it had been vaccinated. Dr. Lyddon did not tell me what was the matter with the child, nor did I ask him. He said if the child got worse I had better let Dr. Guy see it. I took it there about 10.30, when Dr. Guy was vaccinating. The arm was a little better, but was wet and running. The rash was still on the body, and the same places had broken out on the head. I told him the baby had broken out in sores, and he told me to stop a little. This was in the vaccination room. Dr. Guy then asked me to go out into the passage with him, and I sat on the stairs and Dr. Guy looked at it. He told me to give it plenty of opening medicine and let him see it in two or three days; I did not tell Dr. Guy what I thought it was, but I told him how long it had been in that state. Dr. Guy said it was no use making a lot of fuss and bother about the child, showing it to the people in the vaccination station. I kept on putting Dr. Lyddon's ointment on and the child got on nicely, and I did not go to anybody else. There is still a little scurvy on the head and the skin is rough, but I do not know if it is so all over; I have had three children besides this; one died of bronchitis and whooping cough, aged one year and ten months. Before vaccination it was a perfectly healthy baby and did not ail anything; it was just five months old when vaccinated. I have not ailed anything lately; I have had no skin disease or erysipelas. My other children's arms were not so bad as this one's after vaccination. I have been married six years. He (my husband) has had a little spot or two come out on his neck. He has been to Dr. Lyddon for a cold, but he has never been laid up at home. I have never heard of any of my neighbours having erysipelas. I have lived in Queen-street about five years.

Mr. *Henley.*] I cannot say if the child was vaccinated from another child or from the little white things. I turned my head away.

Dr. *Airy.*] Dr. Lyddon said nothing to give me the idea the child was suffering from any serious illness.

Mr. *Grant.*] I had no idea what was the matter with the child; I simply thought the vaccination had turned out badly. Dr. Lyddon did not tell me not to let it go near any other child nor to be careful about giving it the breast. I washed it well with warm water and then put the ointment on. The same week after going to Dr. Lyddon some little yellow spots broke out on the lower jaw and the side of the neck. A scarlet rash came out all over the body; it stood up in little lumps all over the body and legs. This rash broke just on the top of the right ankle. It swelled and cracked a little; a little matter came out, but it soon got all right. I went to Dr. Guy's with the child the Tuesday after I took it to Dr. Lyddon.

Mr. *Chittock.*] I did not know any of the women I saw at vaccination station. When I took the child to be vaccinated I went about 10.30. There were a great many there when I went. Many went into the vaccinating room before me. I cannot say how many were in the vaccinating room. I did not look at any of the babies; I did not take the child's hat off; it wore a hat resting on top of head, and was in short clothes. Dr. Guy said it was a healthy baby the second time I went. On the first occasion Dr. Guy did not say anything to me. I saw Dr. Guy pick up off the table a sharp bright thing. I cannot say if there were any other bright things on table. That was the only one I saw; Dr. Guy pricked vesicles with sharp bright things when I took baby for inspection.

I did not know any of the women at station on inspection day; I saw no children vaccinated from mine. I was let into the vaccinating room by an old gentleman who opened the door. I did not go into waiting room at all on 4th July; some other women were in the room. I sat down whilst other children were being vaccinated. I showed my child to a woman who was sitting near me. Dr. Guy had not spoken to me up to that time. When I showed the child to the woman, Dr. Guy called me out of room into passage. There was nobody else in the passage. Dr. Guy looked at child and spoke to me in passage. The child was wrapped up in a thick pelisse which hung over the arm so as to cover it. I got some opening medicine for child; I had given it some before. I notice that spots come out on my husband's neck now and then several times in course of year. I have noticed the spots coming out on his face as well as neck. They are only small places, and go away of themselves. They do not break, and my husband puts nothing on them.

Dr. *Airy.*] I have never noticed any offensive smells from the drains near my house.

Mr. *Henley.*] I live in a three-roomed house. One bedroom and two other rooms. There are five in my family. There are two windows and a fireplace. There are two beds in the bedroom; the baby sleeps with me.

Sarah Brown's + mark.

J. J. Henley.

JOHN HENRY LYDDON, M.R.C.S.I., says:—

Mr. *Grant*.] I remember seeing the child Brown. It was then suffering from the effects of vaccination. I should not consider it true erysipelas, but should call it erythematous. The mother's description was fairly accurate, but perhaps a little overdrawn. The erythema extended from elbow to shoulder and round to back of arm, and nearly up to left nipple; over the erythematous portion there were some small vesicles filled with clear fluid. There were four large vaccination marks. The heads were off, and semi-opaque matter was oozing from the centre of each. I did not notice anything else but this. The four places were open sores. I prescribed zinc ointment, which I usually use in cases of erythema. The child was suffering from the effects of the cow-pox, with slight fever attending. I repeatedly have cases of erythema after vaccination in my own practice, but not so severe as this. It occurs about the same period after vaccination, the twelfth or fourteenth day. I have also had cases of vesicles turning to open sores and discharging matter. I consider this is one of the results which may be expected from vaccination, but it is not usual. I have about 80 cases of vaccination a quarter. I have about four or five cases like this per quarter out of the whole of the patients of the Institute. I cannot remember more than Harvey's and this case coming to Institute during the year out of children vaccinated elsewhere. This may be taken as the average in my experience. I should not attribute the erythema to any special fault in the vaccine lymph. I do not consider by any examination of vaccine lymph it could be ascertained whether it was likely to produce such results. I am speaking of pure lymph; lymph which appears to be perfectly pure, or which is pure, may produce erythema. There are no medical tests, to my knowledge, by which it can be told whether the lymph is likely to cause erythema. Pure lymph taken from a child perfectly healthy, to all appearance, might produce erythema. In my opinion the only way to judge whether lymph is pure or not is by its results as to erythema. The result is the only guide. That answer would apply to other diseases besides erythema. If the subject of vaccination and the vaccinator were healthy and the lymph pure, erythema and other diseases might still follow vaccination; but the disease would be intensified by unhealthiness in either child. I saw nothing in the state of the child which suggested to me that there had been any carelessness in the vaccination. I do not remember ever seeing the child before. It then appeared a healthy well-nourished child in other respects, and there was nothing about it to show it was specially liable to disease, nor did I notice anything unhealthy in the appearance of the mother. The father belongs to the Institute. I know him, and do not consider there is anything wrong with him. The rapidity of the child's recovery from erythema is a sign of its good constitution. To my knowledge there is no constitutional tendency to disease. The child had not wasted much when I saw it.

Mr. *Henley*.] No serious result or permanent injury has resulted to the child from the erythema. I do not consider it a disease which is likely to recur.

Mr. *Cross*.] In the four or five cases I have had in my practice, out of the 80 per quarter, there would be inflammation or swelling. In one or two cases the places were open. Erythema might be produced by friction or other irritating cause. In the case of two children of different health vaccinated from same vaccinator, one might have erythema and the other not.

Mr. *Chittock*.] I do not examine lymph with a microscope before applying it, nor do I remember ever seeing this done by any medical man. I do not apply thermometer to child before vaccination to ascertain if suffering from fever, as my experience will enable me to form an opinion as to this without a test. I do not strip a child before vaccinating it. If the child's hat is off, and arm bared, this, as a general rule, would be sufficient, and this is my experience of the practice of other medical men. I cannot remember attending Mr. Brown for spots on the neck, nor have I ever seen any spots on the neck. I cannot say if I ever saw the child before vaccination; it had the eruption when I first saw it, but it is fairly well now. I cannot say if it is entirely free from rash now. I have never seen it entirely free from this eruption; I can only judge of the freedom of the child from constitutional disease from my knowledge of the parents. Erythema might be produced entirely independent of the lymph. I attributed the erythema in Brown's case to the lymph, because the child was vaccinated 12 or 14 days before I saw it.

Mr. *Grant*.] One child might resist a disease which another might take. There is a variety in the capacity of different persons to resist disease. A microscopic examination of lymph, in my opinion, would not tell me whether the lymph would produce erythema, although the lymph might appear perfectly pure. I judged of the constitution of the child from its appearance, as well as from my knowledge of its parents. There would be a predisposition to erythema in a full-blooded child; I had no other reason for concluding that erythema arose from the lymph besides the one that the child had been vaccinated a fortnight previously; I attributed the appearance of the child's arm when I first saw it to vaccination.

Mr. *Henley*.] Erythema may follow any febrile disease; erythema would rather follow the cow-pox than the lymph. The lymph would produce cow-pox, and erythema would follow the cow-pox; I have known erythema to follow; I have known erythema to follow measles, and I have seen it appear shortly after vaccination.

Dr. *Airy*.] In cases of the kind I have mentioned, where there have been running sores, they have occurred in cases where the vaccinated children were in fairly good health.

health. In most of these cases I have reason to believe the lymph was taken from healthy subjects. In those cases the erythema was accompanied by blisters; in Brown's case the blisters were of the size of a No. 8 shot; I did not regard this as a case of true erysipelas; I consider Mrs. Brown's other children to be healthy; I do not remember seeing the child who died. Erythema, which is produced by vaccination, is usually of a brighter red or scarlet than that produced from any other cause; I do not know of any specific distinction between erythema produced by vaccination and erythema produced by some other cause.

Mr. Chittock.] One child might have a constitutional tendency to erythema, and another might not.

Mr. Henley.] There is a little more tendency in a child to suffer from erythema after vaccination than from any other one disease. Assuming that a child is carefully vaccinated from pure lymph, erysipelas might follow; I cannot recall such a case.

(signed) John Henry Lyddon.

WILLIAM GUY, Public Vaccinator, says:—

Dr. Airy.] I have no particular recollection of the vaccination of the child Brown, nor of the inspection. I first remember seeing the child on the 4th July, when the mother brought it to the station. I did not notice her come into room. I first noticed mother uncovering arm. I went up and saw the arm full of sores. I cannot remember exactly what I said. I saw her out of room and then followed her. She sat on stairs and uncovered the child. I made a cursory examination, as I was anxious to get her out of house immediately in the interests of the patients. There were places on the left fore arm like dried up scabs of vesicles. I cannot say if there were any on right arm. Above the elbow on left arm there were open pustules. There was no swelling or redness of the upper arm, nor did I notice any dried up vesicles there. I told her to get some Dinneford's fluid magnesia. There was eczema over the child's face and head. I did not recommend any external treatment. I do not remember if Mrs. Brown told me any other medical practitioner was attending child, but I was under impression there was. Mrs. Brown then left, and I never saw her again. I thought the child was suffering from eczema on head and face. There was a lichenous or papular eruption all over the body. I saw whole of the body. There was eczema on face and head. I thought the disease on the child's arm was pemphigus. I thought these complaints resulted from vaccination. It did not strike me that there was any erysipelas. The appearances on the arm were such as might result from erythema.

Mr. Grant.] There were four open pustules on left arm, from which pus was oozing. The eruption on body was papular. I agree with Dr. Lyddon that this was not a case of true erysipelas. I did not consider it erysipelas at all. I only saw the child a very short time. I thought she would have come back again, when I could have made a more minute examination. Generally I agree with what Mr. Lyddon has said. In my opinion, the purity of lymph can only be tested by results. I agree with Mr. Lyddon that, assuming a healthy child to be carefully vaccinated with pure lymph, erysipelas might follow. Unfortunately I can recall cases in my practice. I have been public vaccinator since 1864. I refer to the cases the subject of this inquiry. In these cases I believe the children were healthy, vaccinated with pure lymph, and erysipelas followed. My answer applies to Threadkill's, Tyler's, Lambert's, and Colison's cases. The first three were cases of severe erysipelas; Colison's case I did not see in its severest stages. In Tyler's case I think erysipelas was the result of vaccination. I cannot account for any other cause besides the vaccination. In Tyler's case I believe erysipelas was the result of vaccination, but cannot say if it was produced by lymph or scratch. This would also apply to Lambert's case. In Threadkill's case I think the child was improperly treated in first instance, and have since heard there was a case of erysipelas in the neighbourhood at that time, which has caused me to modify my previous opinion, and I withhold any opinion as to cause of erysipelas. I have made inquiries, and have heard of no erysipelas in Tyler and Lambert's neighbourhood. I was told of the erysipelas in Threadkill's neighbourhood. In Colison's case I am of opinion the child may have died of erysipelas and bronchitis combined. I have not modified my opinion as to this case.

Mr. Cross.] Assuming the child to be exposed to atmospheric or other influences, or to be in bad health, erysipelas might ensue from any scratch or wound. If a child was properly vaccinated with pure lymph, erysipelas might follow.

Mr. Chittock.] May Brown was vaccinated from Wicks, No. 45. Seven children in all were vaccinated from No. 45. These are all entered as successful cases. Their names are Brown, Girling, and five others. In the other five cases I have heard of no ill results from vaccination. I did not see any of these five children after the inspection day. On the 20th June I used Albert Ward, No. 43, one of the children vaccinated from 45, as a vaccifer for three cases.

(signed) Wm. Guy.

ELLEN, Wife of ALBERT ERNEST WICKS, of Compass-street, Mariner's-lane, in the City of Norwich, Blacksmith, says :—

Mr. *Grant*.] I remember taking my child to be vaccinated on the 6th June. There had been nothing the matter with it before vaccination. I took cape off, slipped the child's dress down. Dr. Guy did not speak to me at all. The arm came up all right. When I went up for inspection, 13th June, Dr. Guy vaccinated two children while I held the baby, and he took six bone points of lymph from my baby's arm. Dr. Guy simply asked me to sit still on another chair whilst he vaccinated the babies. He asked me no questions about myself or baby. The arm done well and healed up all right. I had never seen Dr. Guy before; that was my first baby. I have not had anything the matter with me lately, nor has my husband, and there was no erysipelas in my neighbourhood in about June last to my knowledge.

Dr. *Airy*.] He used the little bright knife to vaccinate the two children. He did not use the bone points, nor did I see him use them to vaccinate any other child with. The child has ailed nothing lately. I did not know the two women whose children were vaccinated from mine.

Mr. *Chittock*.] Dr. Guy took the lymph from my child's arm with a bright instrument. I took the child to be vaccinated in short clothes. It was three months old; I took off the hat and pelisse and dropped the dress down; I remained in the station about 10 minutes for the blood to dry. I heard Dr. Guy tell the mothers in the room to remain until arm dried. I noticed that the child mine was vaccinated from was a nice healthy thing. The mother looked a very respectable woman.

(signed) *Ellen Wicks.*

GIRLING'S CASE.

SUSAN, Wife of WM. JOHN GIRLING, of Waddington-street, Norwich, Wood-turner, says :—

Mr. *Grant*.] I remember taking my baby to be vaccinated on 13th June; I had been before with two others. I took the pelisse off, and took the sleeve off the arm. Dr. Guy did not say anything to me, but vaccinated the baby; I heard him tell the other women to stop until the blood had dried, but I do not remember him saying anything particular to me: I noticed the baby was very sadly day after vaccination. The baby was not so sprightly as before, was paler and very sleepy; on the Friday morning she appeared very sleepy, and the inflammation began to come below the places; I did not put anything on arm. The child had been dressed after the Tuesday; on the Friday night, or Saturday morning, the arm got more inflamed and swollen, and hard, and blisters came out. The child was very ill, cried a good deal, and could not bear to be moved, and side appeared to be painful; had a little sop as well as breast; did not eat so well. When I took her to inspection, arm very much inflamed down to the wrist. I showed Dr. Guy the whole arm, and he shook his head. I asked him what I should do to the arm as vaccine marks had not come up. He told me he would give me some lotion for it, which he did. At this time the arm was very red. There was no inflammation particularly on the places. The inflammation began just below the places, and spread down to fingers' ends. The pocks had come up very little; the heads were small and thin, and the day after vaccination a little corruption came out. When I went to inspection, the inflammation had got down to just above the wrist; large blisters lay like bubbles all over left arm. I took the child to Dr. Guy's on Thursday morning after inspection; the arm was no better. I had put the lotion on in the meantime; I saw Mrs. Guy, who gave me a bottle of lotion. I took child to Dr. Guy's again on the Thursday; I told him the arm was no better; I told him child very much inflamed on arm and shoulder, and he said it would go across chest; I replied I hope not. He said it would go on all right. I put on lotion Mrs. Guy gave me. The arm seemed better that night, and was worse the next morning. The inflammation had spread round the shoulder to the neck. I did not take it to Dr. Guy's any more. On the Saturday morning I took it to Mr. Matthews, who gave me some lotion to do arm with, and ointment to put on the vaccinated places. On this Saturday, when Mr. Matthews saw the child, there was a little thin head on the places. The child began to get better after using lotion and ointment; Mr. Matthews said the child's health was failing. The child was very much convulsed on the day before inspection, and also on the inspection day. Up to the time of vaccination the child had been quite well, and had not had a day's illness; I never heard of any of my neighbours having erysipelas at about that time. I have been pretty well the last year or so, and my husband has been in good health also. He has not been laid up; I do not go out to work. My other children have been in good health. I have noticed no bad smells about the house.

Mr. *Henley*.] My child is now quite free from eruptions; my child was not teething at time of vaccination; none of my other children have ever suffered from rash, or had anything the matter with their heads.

Dr. *Airy*.] Dr. Guy saw the child twice whilst it was ill.

Mr. *Cross*.] I have been married five years last February; since that time neither my husband nor myself have ever ailed anything particular; my other children have done well at vaccination; the house slops go into a drain; I do not know where drain leads to.

Mr. *Chittock*.] I saw the first day's report of this inquiry, but no others; I read Mrs. Threadkill's case; I took the child's cap off, and took sleeve off arm, so that dress dropped down side; child was in short clothes; it was six months old; my mother held child during vaccination; I saw the child mine was vaccinated from; it was a small child, but looked pretty healthy; I saw nothing amiss with it; I cannot say what Dr. Guy took the lymph from the child's arm with; I saw Dr. Guy cut my child's arm; I cannot say exactly what he did it with; I remained in room after vaccination about 10 minutes to let the blood dry; the blisters on the left arm were as large as a bean; they were as large as that when I took the child for inspection; I first observed the blisters on Friday night or Saturday morning; I thought I had better wait and let Dr. Guy see the child; the child was ill about three weeks after vaccination; I first gave information to Mr. Bliss about five weeks after the vaccination; Mr. Bliss came to my house; he was alone; I think Mr. Bliss said one child had died from erysipelas after vaccination; I told him mine was suffering from erysipelas; the inflammation did not extend across the child's chest as Dr. Guy said it would.

(signed) Mrs. S. *Girling*.

SAMUEL MATTHEWS, of the City of Norwich, Accoucheur, says:

Dr. *Airy*.] I remember seeing the child Laura *Girling*; I think about 24th June; it was brought to me; when I saw it there was inflammation about two inches below the pustules and to the end of the fingers; inflammation with considerable œdema, and I think there were some blisters about the hand; the inflammation was entirely confined to vaccinated arm; I considered the affection to be erysipelas, but could not say from what cause; I distinguish erysipelas from erythema; I should describe this case as one of erysipelas on account of continued inflammation, hardness, and the blisters; the vaccine vesicles were nearly dead when I saw them; I think there was a little inflammation in the places, such as is usually seen in such cases.

Dr. *Airy*.] I considered this case to be of a similar type to Threadkill's, but not so bad; I did not consider Threadkill's a contagious case; the disease was more local.

Mr. *Henley*.] I consider a constitutional case of erysipelas to be contagious; I consider a case of erysipelas to be infectious or contagious when it arises from something poisonous in the air, bad drainage, or something of that sort. If erysipelas came from an accident I should not consider it to be so dangerous or infectious as erysipelas arising from constitutional causes. I should be guided by the low and bad state of circulation, partial coma, and symptoms of poison.

Mr. *Chittock*.] I cannot go further than saying that I think there were some blisters; there was no eruption about any other part of the child; I do not remember treating Mrs. *Girling* or her family before; I have not been to her house; I applied an ointment, chiefly composed of oxide of zinc; the lotion was *rumex botanica*, a decoction; I saw the child four times in three or four days, always at my own house; I think I continued the same treatment; the child got well.

Mr. *Henley*.] I did not consider the disease immediately dangerous, but serious; I should not consider this case infectious; I should not consider it to be contagious; I do not remember giving the mother any special cautions with regard to other children; I do not think I inquired if she had any other children; assuming there to be other children, I do not think there would have been any danger in taking this child into the house. The reason why I thought there were blisters was because there was a large amount of serum; I made no note of this particular case; I first remember what I used; this enabled me to recollect the serum; the child's arm was not a bright red, but a little darker; it was purple; not quite so dark as liquid coffee; it was the colour of a light infusion of coffee, by which I mean something between a bright red and a dark red; I saw the child three or four times; I do not consider a child suffering from local erysipelas would take harm by being brought out if well wrapped up; if there was danger I should visit the child at home; in a serious case of erysipelas I should not think it better to suggest that I should see the child at home if there was no danger; Mrs. G. lives about a quarter of a mile from mine; I did not consider there was any occasion for me to visit the child at home; I cannot say positively whether anything was amiss with the side.

Mr. *Henley*.] After all I have heard I am still of opinion that this was not a case of erythema, but of erysipelas.

(signed) S. *Matthews*.

WILLIAM GUY, M.D. and M.R.C.S., says:—

Dr. *Airy*.] I do not remember vaccinating Girling; the register shows it was vaccinated on 13th June; I do remember inspecting the child on 20th June; at the inspection I remember Mrs. Girling showing me the baby; the erythema extended from the elbow down to the wrist, but I don't remember if there were any bullæ on the hands; I cannot remember how long after inspection I saw the child; when I first saw the child Girling, I cannot remember the state of the vaccination vesicles, nor in what stage they were; I cannot remember what treatment I advised; I considered it to be a slight case of erysipelas; I last saw the child on 22nd instant, when it appeared to be in very good health; I never considered the child's life was in danger; I saw no sign of unhealthiness in the child or in the father or mother; they live in a nice clean little house; I think the case was one of erysipelas, and caused by vaccination; the child gradually got better under my treatment, and to all appearance was quite well when I last saw it.

Mr. *Henley*.] In my opinion no permanent injury to the child's health is likely to arise from this disease, nor is the disease likely to recur.

Mr. *Grant*.] There were a few bullæ; I do not remember noticing any tension; the arm was not swollen.

Mr. *Chittock*.] Laura Girling was vaccinated from Ellen Wicks, No. 45.

(signed) *Wm. Guy.*

INTIMATION TO COUNSEL.

The Inspectors desire to intimate to the Counsel engaged in the inquiry that they do not require any general evidence in connection with the remaining cases with reference to the duties performed by the public vaccinator at the Station, either with regard to the examination of infants, the performance of vaccination, or the state of the instruments.

They do not wish to exclude any special evidence that Counsel may offer.

1 September 1882.

(signed) *Joseph John Henley.*
Hubert Airy.

1ST SEPTEMBER 1882.

WILLSEA'S CASE.

ELLEN WILLSEA, Wife of Joshua John Willsea, of St. George's, Middle-street, in the City of Norwich, Confectioner.

Mr. *Grant*.] I REMEMBER taking my child to be vaccinated to the vaccination station on 13th June; I first noticed something the matter with it the 9th day after vaccination; as far as I knew, it was all right on the inspection day; the day after the inspection I noticed that the left leg was swelling; the outer side of the left leg first swelled, and then got red, until it burst; I felt it, and it was hard; the swelling spread down to ankle; the right arm also began to swell, but got very well before leg burst; there was nothing the matter with the left arm; I took the child to Dr. Guy's the day after inspection; I said you did not take anything from the arm yesterday, and I suppose this is the result; he said erysipelas was very much about Norwich, and he had had several cases, and he supposed the warm weather was against children being vaccinated: he gave me some medicine for child to take, and told me to bathe leg; on the next day Dr. Guy called; there was then nothing the matter with right arm; the leg only was bad; I had given the child the medicine, and bathed the leg; I asked him if the complaint was dangerous, and he said he did not think it was; he gave me some more medicine, but no lotion; Dr. Guy called again some day in the next week; the baby was much about the same, but the leg was forwarder; it had spread to ankle; arm swelled from wrist to elbow, like leg, but not so bad; he said, go on with the medicine and bathing; I took the child to Dr. Guy's, and showed him child's arm; he told me not to poultice it, but bathe with warm water; the arm burst in about three weeks from the time it first got bad; Dr. Guy called twice before it bursted; when I took the child to Dr. Guy's house the arm was nearly fit to burst, and he lanced it and let the matter out; about a week after this Dr. Guy lanced the leg; up to the time of lancing I continued the medicine, and after the lancing I poulticed it, and it gradually got better; the leg still continues to gather and burst a little; the arm is quite well.

Dr. *Airy*.] The leg last discharged about a week ago.

Mr. *Henley*.] There is nothing the matter with child's head.

Mr. *Grant*.] The baby was about six months old when vaccinated; before that it was quite well, and never had a day's illness; I have had three children besides this; they have never ailed anything like this; there has not been anything the matter with the people around me to my knowledge; I cannot ascribe the child's illness to any other cause but the vaccination; I have been married seven years, and besides, during confinements, I have never required a doctor, nor my husband neither; I am a lady's boot flowerist, and work at home; I noticed no bad smells about the house from the drains last summer; I have lived only there five or six months; Dr. Beverly is my family doctor; during the last two or three years I have never had a doctor in the house; the baby has not yet began to teethe; as a rule my babies begin to show their teeth at about ten months of age; I believe my child was vaccinated from Mrs. Payne's child; I saw the lymph taken from the child Payne's arm.

Mr. *Henley*.] Up to the day of inspection the child's arm presented the same appearance as my other children's after vaccination, but the places in the last child's arm died away sooner than usual.

Dr. *Airy*.] There was nothing else the matter with the child besides the swelling of leg and arm; there has lately been some little yellow blisters on the head; when it was first ill it used to start from the pain of the places, whilst they were gathering, every time he moved the leg; I did not notice any shivering; there has lately been a sort of a little rash or irritation on the left leg.

Mr. *Cross*.] I have never had any trouble with my other children after vaccination; I did not particularly notice child from whom the lymph was taken; I noticed the mother more.

Mr. *Chittock*.] I have always understood the woman's name was Payne from whom my child was vaccinated; I should recognize her again.

The leg discharged a good deal; a week ago it discharged a little, and I think it is getting a little better; Mrs. Threadkill came to see me about a fortnight after her baby died; I had not known her before; I showed her the baby's leg and arm; she came alone and said it was a very bad case; she did not stay long; she did not tell me to see anyone; Mr. Bliss called upon me about a week after the inspection; I had not sent for him.

Mr. *Cross*.] Dr. Guy vaccinated my first child.

Mr. *Henley*.] Dr. Guy did not tell me that the disease my child was suffering from was contagious.

(signed) *E. Willsea.*

WM. GUY, Public Vaccinator, says:—

Mr. *Grant*.] I remember seeing the child Willsea on 21st June last; it was suffering from inflammation of the left leg; there was a hardness under at the top of the calf of the leg; it was not erysipelatous; I should describe it as an abscess forming; the arm was afterwards affected; I treated it with hot fomentations, and I believe salines; I am not sure; there was an abscess which suppurated, forming on the arm also; the arm has now got well; the leg has not got quite well; it is not likely to leave any serious or permanent injury to the child, no shrinking of the tendons; a deep-seated abscess might; there is no destruction of tissue here; the abscess on leg was about the size of a pigeon's egg; I attribute the abscess to the inflammation, but I have no theory as to cause of inflammation, with the exception of vaccinating one other child, I will not say it is a family I know medically; I cannot say if there was any predisposition to diseases of this kind in the family; I am sure it was a hot day when Mrs. Willsea called on 13th June. (*Table as to Temperature during June put in.*)

Mr. *Henley*.] I took no lymph from the child's arm, because the vesicles were too forward; some vesicles mature quicker than others; it is not an unusual occurrence.

Mr. *Chittock*.] Willsea, No. 85, was vaccinated from No. 51, Davison. Seven children in all were vaccinated from Davison, viz., Watling, Willsea, Frost, Loynes, Cook, Rudd, and Smith. With the exception of Willsea's case I have heard of no ill results following the vaccinations. I have made no inquiry as to any of these cases; they are all marked as cases of successful vaccination. No. 51, Davison, was vaccinated from 33, Simpson. Seven children in all were vaccinated from No. 33, all of which cases are marked as cases of successful vaccination. The seven children include Ellen Wicks and Davison.

Dr. *Airy*.] When I lanced the abscess the discharge was not very large, not larger than would come from a cutaneous abscess. I judged abscess was not a deep-seated one, from amount of discharge; I believe the abscess was situated outside the fascias of the muscles of calf; I saw no bullæ or anything to lead me to think there was erysipelas; I did not think the redness of skin was erysipelatous.

Mr. *Henley*.] I have examined the child this morning, and I consider it nearly well.

(signed) *Wm. Guy.*

WORRELL'S CASE.

MARY ANN, Wife of JOHN WORRELL, of 9, Fisher's Buildings, Grapes Hill, in the City of Norwich, Carpenter.

Mr. Grant.] My baby was vaccinated on 27th June. I first noticed something the matter with the child on the Sunday after inspection. The vaccination took all right. On the Sunday spots came out on the back of the neck, and also on the eyelid. On the Monday week the left arm was inflamed; the vaccination pustules were turning brown, but had not died away; the inflammation first showed itself on the left arm above the vaccination marks; during the day the vaccination spread down to elbow and the arm swelled; I touched the arm and it was quite hard like a piece of board. A neighbour came in and persuaded me to put a warm bread and water poultice on, which I did. On the Tuesday morning the swelling and redness had got down to the wrist; I did not notice anything else. I put some flour on the spots on the back of the neck on the previous Sunday week, and these went away. I went to Dr. Guy's on the Tuesday morning at about 10 o'clock; I told him the baby was ill, and asked him to come round and see it, which he did during the day. Mrs. Guy came and spoke to me first and said she would tell her husband; and afterwards I went to the vaccinating room, where one woman was waiting; I saw Dr. Guy then, and he said he would come during the day; he came about three o'clock in the afternoon; I showed him the baby's arm. He asked me what I had done to the arm, and I told him I had put a poultice on; I think he said I ought not to have poulticed it; he told me to send to his house for some medicine, and to wrap the arm in wool and flour it, and this I did. I gave the baby the medicine I got from Dr. Guy's. Dr. Guy called the following day and saw it; he came altogether about six times. The second day he called he gave me some wool, as he said mine was not good enough. The inflammation spread down to fingers' ends; it did not extend to body; some blisters came up on left arm; these broke out and like water came out. On the Sunday following Dr. Guy's first visit the arm began to get better, and gradually quite well. It has been well now for about a month. It was ill altogether about three weeks.

Dr. Airy.] I first noticed the spots on neck and eyelid on the Sunday following inspection; on this same Sunday evening I first noticed the arm turn bad; I could see the vaccination marks at this time; I would alter what I have previously stated as to when I first noticed the inflammation in the left arm; I first saw this a fortnight after inspection, and on the Sunday after the spots appeared on the neck and eyelid, 16th July; it was two days before Mr. Bliss and Mr. Burgess called. The child was born on the 29th April. It had ailed nothing before vaccination. I have had 14 children, four of whom are dead. The first died in decline, aged 11 months; the second of inflammation on chest, aged eight months; the third, of measles, aged one year eight months; the fourth, of inflammation on chest, aged eight months. All my children have been vaccinated, and with the exception of last they have done well after vaccination. There has been no erysipelas in my street lately, and I did not notice any particular smells from the drains during baby's illness. My husband has never had any skin disease. I do not know Mrs. Threadkill, or Tyler, or Lambert, or Collison, or Harvey, or Brown, or Willsea; I did not know the woman waiting in the vaccination room. I did not know any of the women waiting at the station on the inspection day. The day I took my child to be vaccinated Dr. Guy would not vaccinate one child, as he said it had skin disease (red gum). I do not know who this child was. I cannot account for the baby's arm going bad. Mr. Lyddon is my club doctor, and would attend all my children, and I told Dr. Guy this, and he told me he would charge nothing, and he also gave me some medicated wool. I did not go to Mr. Lyddon's when the baby was ill, as I thought I had better tell Dr. Guy about it, as he had vaccinated it.

Dr. Airy.] I know the Paul Pry public-house on Grapes-hill; I never go there; I believe Mrs. Farrow keeps it; I never meet her and do not speak to her.

Mr. Cross.] My own health is good; I have never ailed anything beyond colds; my husband had typhus fever 10 years ago; he has never had any skin disease.

Mr. Grant.] I get my beer from Mr. Bacon's, Barn Tavern; I send my little girl for the beer; I have heard of no illness at any of the places where my children work, nor at the school they attend.

Dr. Airy.] I do not remember seeing any child at the vaccination station when I took my baby to be inspected, which had an inflamed arm; I cannot account for the baby's complaint; mine is a four-roomed house, two bedrooms, and two rooms down stairs; eight persons occupy the two bedrooms, two bedsteads in each room.

Mr. Henley.] I have no complaint to make against Dr. Guy as public vaccinator.

(signed) M. A. Worrell.

WILLIAM GUY, Public Vaccinator, says :—

I attended the child Worrell; I cannot give the date; the arm was generally inflamed and erysipelatous; I cannot remember if it extended to the chest; I continued to attend it for some time; I took Dr. Allen, my deputy, to attend it with me; he agreed with

me that child was going on nicely ; I attended the child until it was convalescent and out of danger ; that is all I know of the case ; the child was vaccinated on the 27th June last, and I attended it in July ; the vaccinifer in this case was No. 106, Lily Newman ; Newman was vaccinated from 68 ; Hannah Newman, who was vaccinated from 54, Marriott ; referring to the register I found Worrell's case marked successful ; I took no lymph from its arm ; it was one of the erysipelas cases which arose after vaccination.

I do not know the cause, and only wish I did ; three children in all were vaccinated from No. 106, Lily Newman ; viz., Gosling, Worrell, and Goss ; Gosling and Goss are marked as successful cases ; I have not seen the children since, nor inquired about them, but, so far as I know, no ill effects followed these two vaccinations ; I do not remember my treatment of Worrell.

Dr. *Airy*.] There were bullæ on the arm.

Mr. *Henley*.] The child is perfectly well at the present time ; I do not vaccinate in any special dress ; in all probability I was wearing the same suit of clothes when vaccinating as I wore when attending these erysipelas cases ; I take no measures for disinfecting myself or my clothes after visiting erysipelas cases.

Mr. *Chittock*.] I do not turn up my coat sleeve during vaccination.

Mr. *Grant*.] I considered Tyler's, Lambert's, and Threadkill's cases infectious and contagious.

(signed) *William Guy*.

WILLIAM GUY states :—

Mr. *Henley*.] I wish to correct the deposition given to-day as to my not changing my dress after visiting erysipelas cases ; I invariably change my coat as soon as I return to my house, whether I have been to infectious cases or not ; I always use salicylic soap in washing my hands.

Mr. *Grant*.] I know the ordinary precautions taken by medical men after visiting patients, and I follow these out ; I never receive patients before 10 o'clock on vaccinating mornings, nor receive private patients in the vaccinating room ; there is no carpet in vaccinating room, and every precaution is taken to keep it clean ; Mrs. Guy herself superintends the cleanliness of the vaccination room and surgery.

(signed) *William Guy*.

JOSEPH ALLEN, of the City of Norwich, M.R.C.S.E. and L.S.A.

Dr. *Airy*.] I first saw the child Worrell on a Sunday in July ; I do not know the date ; Dr. Guy was with me. The arm looked as if it had been swollen, and the swelling subsided. I cannot say more as to the nature of the disease than that there had been swelling in the arm and that the child was then convalescent ; Dr. Guy asked me to see this child after the cases the subject of this inquiry had been published in the papers ; Dr. Guy had been attending this case for some days when I went ; when I saw the child the mother had been applying lotion and wool ; I told the mother and father that the child would do all right ; I saw no remains of any bullæ or blisters on the arm.

Mr. *Chittock*.] I had no cases myself of erysipelas in the month of July last ; I had a case of erysipelas at Thorpe about a fortnight ago ; the child was about 12 years ; the erysipelas was concurrent with rheumatic fever.

Mr. *Grant*.] I had no cases of erysipelas in June last.

Mr. *Henley*.] I saw nothing about the house or its surroundings to produce erysipelas.

(signed) *Joseph Allen*.

DAVISON'S CASE.

LOUISA DAVISON, Wife of William Davison, of Patteson's-yard, Madgalen-street, in the City of Norwich, Labourer, says :—

Mr. *Grant*.] I AM sometimes called Payne ; I remember my baby being vaccinated on 6th June last ; the vaccination took all right ; on the inspection day Dr. Guy took some matter from baby's arm ; I remember Mrs. Willsea's child was amongst those vaccinated from mine ; my child did well after inspection ; I have noticed no erysipelas in my neighbourhood, nor any bad smells from drains ; my husband is working on the railway line in St. Martin's ; my husband, and myself, and my children, have good health ; this child was well both before and after vaccination.

The mark × of *Louisa Davison*.

J. J. Henley.

NEWMAN'S CASE.

MARTHA NEWMAN, Wife of Benjamin Newman, of Ber-street, in the City of Norwich,
Labourer.

I REMEMBER taking my baby Lilly to the vaccination station to be vaccinated in June last; there was nothing the matter with the child at that time. When I took it up for inspection the child's arm was quite right; the baby did not appear to be ill, but the arm did not do very well after inspection; my neighbours apparently were all quite well; at that time I went out to work as a boot machinist; I did not notice any bad smells about the house, or from the drains, or otherwise; myself and my husband have had good health.

(signed) *Martha Newman.*

Dr. WILLIAM GUY, examined.

WILLIAM GUY, M.R.C.S., says:—

Mr. Grant.] I do not have the Reports of the Medical Department of the Local Government Board sent to me, nor have I had any Returns with reference to small-pox moved for in House of Commons. I have not seen Mr. Hopwood's Return, ordered to be printed in August 1877. I have not seen the Report presented by Mr. Netten Radcliffe in 1876 to the Local Government Board with regard to cases of erysipelas following vaccination in the Misterton district, Gainsborough Union, nor have I seen any Return presented in 1877, showing an increase of inoculable diseases in infants. I have not seen any Return presented in 1880 as to inoculable diseases amongst infants under five years of age; I have not seen a Return presented in 1880 of inoculable diseases separately specified; I have not received any intimation from the Central Department that such papers existed. I have not heard from different officers of the department within the last five years that valuable information as to vaccination was to be found in the Government Papers. My attention has never been called by any Government Inspector to the Gainsborough cases. I have been twice rewarded for successful vaccinations. These awards are based upon the returns which appear in my registers; also upon the way in which I perform the vaccinations. The Inspector who recommended the award sees me perform the vaccination. As a rule an Inspector is present during vaccination once every two years. It was two years before these cases in June that an Inspector had seen me vaccinate; no Inspector was present on June 13 when these vaccinations were performed. At one inspection I was using an instrument that the Inspector did not approve of; that was four years ago; it was a scratcher; he did not approve of it; he suggested that I should use a lancet instead; and on another occasion he suggested that I should use the lancet instead of the points; with those exceptions I have had no complaints from him; I have made no difference in my method of vaccination when an Inspector was present from when he was not; the examination of the children was the same, and so also was the conversation with the mothers; I have been public vaccinator nine years in Norwich. I vaccinate, roughly, 1,200 or 1,300 per annum. Generally speaking it is a very rare thing for children to be brought back after inspection day as having something the matter with them arising from vaccination; these complaints would be made generally the week after inspection.

Dr. Airy.] The ivory points which are now in use have been in use about three or four months; I think I had a box full quite new three or four months ago, and I at once began to use them, and have given them away. The points used in the cases under inquiry were used about six weeks or two months previously to being used to vaccinate the children the subject of this inquiry, or they must have been new; I do not use the same points more than once on same day; when a point is once used I put it into a saucer; after use I put a point into water and rub it on a towel, then rub it on emery paper, then put it into water and rub it on a towel again, and before using it again I put it into water and wipe it on a towel.

(signed) *William Guy.*

CHARLES WILLIAM DOYLE, of the City of Norwich, M.B. (Aberdeen), and Master of Surgery (Scotland), says:—

Mr. Grant.] I attended Mrs. Balls in her confinement; she had no particular trouble in confinement; so far as I can recollect there was nothing special about the child except that it was puny.

Mr. Henley.] I am satisfied about the correctness of the death certificate given by me. The child died on 25th July; the illness from which the child was suffering was in my opinion one which existed in it before vaccination.

REPORT RELATING TO

The above depositions of William Bacon, William Guy, Lucy Jane Threadkill, Emily Armes, Hannah Rumsby, John Robert Pearson, Emma Dady, Samuel Matthews, Thomas William Richardson, Sarah Chettleburgh, Elizabeth Bishop, Clarissa Guy, Sarah Ann Agnes Guy, Martha Beales, Charlotte Tyler, Frederick Tyler, John Crook, Harriet Westcott, Fanny Soplia Lambert, Ann Boast, Mary Elbeck, Maria Sewell, Lucy Colison, Elizabeth Starling, Mary Ann Harvey, Matilda Coan, John Henry Lyddon, Elizabeth Marriott, Sarah Brown, Ellen Weeks, Susan Girling, Ellen Willsea, Mary Ann Worrell, Louisa Davison, Charles William Doyle, and Martha Newman, were taken before us on the 23rd, 24th, 25th, 28th, 29th, 30th, and 31st days of August, and on the 1st day of September 1882.

(signed) *J. J. Henley.*
Hubert Airy.

APPENDICES TO REPORT.

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No. 1.

STATEMENT of Dr. GUY.

(Put in, 4 September 1882.)

William Guy, M.D., the Public Vaccinator for Norwich, most respectfully submits for the consideration of the Local Government Board:—

THAT in addition to appointments previously held by him, he has filled that of Public Vaccinator for Norwich about nine years.

That the average of vaccinations at his station have been about 1,200 annually.

That this is the first complaint made against him as to the discharge of his duties in such office.

That he has twice received substantial rewards on the recommendation of Dr. Airy, Vaccination Inspector, for successful and efficient vaccination.

That Dr. Airy has from time to time witnessed his method of operating, and he (Dr. Guy) has never omitted to observe and act upon all suggestions made by Dr. Airy to him.

That he has according to the best of his judgment substantially, although perhaps not literally, obeyed the orders and instructions of the Local Government Board with regard to vaccinations.

That with reference to the present inquiry, he much regrets he cannot make any suggestion as to the cause of the appearance of erysipelas after vaccination beyond the general one, that such disease will occasionally follow vaccination, notwithstanding the exercise of the greatest care and caution on the part of the operator.

That the vaccination station is well situated, and he submits that the evidence taken shows that it is in every way adapted for the purpose for which it is used, and that special attention is given to its cleanliness.

That the lancet and points used were in good condition, and carefully cleaned after each operation, and were never used for any other purpose. They were kept in a box apart from all other instruments. The points were not used twice on the same day.

That he made such a substantial examination of each child presented for vaccination as to satisfy him that such child was in a fit state of health to be operated on, and also exercised the greatest caution in the selection of vaccinifers. That from the number weekly vaccinated, an ample supply of lymph in the best condition was assured.

That the mothers of all the children vaccinated in the nine cases inquired into were examined and proved that their infants were in good health up to the time of vaccination. That in every instance the vaccinifer was produced, and its mother examined, the result showing that all such vaccinifers were healthy subjects at the times of vaccination and inspection, and that they had remained so.

That the facts referred to in the last paragraph confirm him in his statement that he made a substantial examination of the children at the vaccination station.

That many other children vaccinated from the same vaccinifers experienced no ill results nor did any disease follow such vaccination.

That inquiries made beyond the immediate vaccinifers have not been successful in tracing disease.

That no private patients are attended by him in his vaccinating room. That none are attended by him on Tuesdays before the vaccinations.

That on his return from visiting patients in all cases, whether infectious or not, he changes his coat, and uses disinfecting soap for washing.

That his official duties are confined to the vaccination station on the days of vaccination and inspection, and he has always faithfully and to the best of his ability discharged such duties.

That in addition he has voluntarily attended children suffering from illnesses arising shortly after vaccination, and supplied medicines, &c. gratuitously.

That he refrains from making any observations upon matters which are beyond the scope of this inquiry (although alluded to in the course of it), in deference to the opinion expressed by J. J. Henley, Esq., the presiding Inspector.

No. 2.

EXTRACT from METEOROLOGICAL RECORDS.

(Put in, 1 September 1882.)

DATE.	June 1882.—Temperature.		DATE.	June 1882.—Temperature.	
	Highest.	Lowest.		Highest.	Lowest.
1 June - -	63·0	46·0	17 June - -	68·8	44·0
2 „ - -	64·0	49·8	18 „ - -	59·5	50·0
4 „ - -	69·5	52·8	19 „ - -	63·2	49·0
5 „ - -	66·0	50·0	20 „ - -	70·8	51·0
6 „ - -	66·0	57·8	21 „ - -	66·5	53·0
7 „ - -	70·0	53·0	22 „ - -	68·5	56·8
8 „ - -	65·2	49·0	23 „ - -	*6·0	51·5
9 „ - -	59·0	51·0	24 „ - -	69·5	54·0
10 „ - -	61·8	51·0	25 „ - -	67·2	56·0
11 „ - -	*3·0	47·0	26 „ - -	73·0	51·0
12 „ - -	58·2	48·0	27 „ - -	65·0	54·0
13 „ - -	57·0	43·0	28 „ - -	72·5	54·0
14 „ - -	62·5	48·0	29 „ - -	75·0	56·0
15 „ - -	60·2	49·0	30 „ - -	70·0	52·0
16 „ - -	62·0	45·0			

* Illegible.

Extracted from the Meteorological Reports in "The Eastern Daily Press" by me,

Saml. Bennett.

No. 3.

NORWICH UNION.—Vaccination Return for Five Years,
from 1877 to 1881, inclusive.

(Put in, 1 September 1882.)

Years.	Births.	Success— Vaccinated.	Insus- ceptible.	Small-pox.	Dead— Un- vaccinated.	Postponed.	Removals, and Cases not found.
1877 -	2,819	2,472	3	1	306	1	36
1878 -	2,845	2,415	1	- -	377	2	50
1879 -	2,871	2,529	1	- -	297	4	40
1880 -	2,976	2,496	1	- -	413	3	63
1881 -	2,948	2,541	1	- -	295	23	88
TOTAL -	14,459	12,453	7	1	1,688	33	277

Dead, unvaccinated, 1,688, or 11·6 per cent.

Edward Thirkettle,

Norwich, 24 August 1882.

Vaccination Officer.

N. B.—This Return includes all the vaccinations in Norwich, private as well as public.

H. A.

No. 4.

COPIES OF DEATH REGISTERS.

Book, No. 46, Page 34.

1882. DEATHS in the District of *West Wymer*, in the City and County of the City of *Norwich*.

No.	When and Where Died.	Name and Surname.	Sex.	Age.	Rank or Profession.	Cause of Death.	Signature, Description, and Residence of Informant.	When Registered.	Signature of Registrar.
166	25 June 1882 12, St. Swithin's-terrace, St. Swithin, U. S. D.	Percy William Threadkill	Male	Five months -	Son of William Threadkill, a miller's carter.	Erysipelas, certified by William Guy, M.D.	Lucy J. Threadkill, mother, present at the death, St. Swithin, Norwich.	27 June 1882	Benjamin L. Nockall, Registrar.

I certify that the above-written is a true Copy of an Entry in the Register Book of Deaths in the District of West Wymer, Norwich.

Dated this 22nd day of August 1882.

(signed) Benjamin L. Nockall, Registrar.
22/8/82.

Book, No. 46, Page 34.

1882. DEATHS in the District of *West Wymer*, in the City and County of the City of *Norwich*.

No.	When and Where Died.	Name and Surname.	Sex.	Age.	Rank or Profession.	Cause of Death.	Signature, Description, and Residence of Informant.	When Registered.	Signature of Registrar.
167	26 June 1882 Union-street, U. S. D.	Emma Elizabeth Tyler	Female	Four months -	Daughter of Frederick Tyler, a coach vice- man.	Erysipelas, from vaccina- tion, 13 days, certified by John Crook, M.R.C.S.	× The Mark of Charlotte Tyler, mother, present at the death, Heigham, Norwich.	28 June 1882	Benjamin L. Nockall, Registrar.

I certify that the above-written is a true Copy of an Entry in the Register Book of Deaths in the District of West Wymer, Norwich.

Dated this 22nd day of August 1882.

(signed) Benjamin L. Nockall, Registrar.
22/8/82.

1882. DEATHS in the District of *Coslany*, in the City and County of the City of *Norwich*.

No.	When Died and Where.	Name and Surname.	Sex.	Age.	Rank or Profession.	Cause of Death.	Signature, Description, and Residence of Informant.	When Registered.	Signature of Registrar.
207	26 June 1882 Queen Caroline-yard, St. Martin-at-Oak, U.S.D.	Alice Sophia Lambert	Female	Four months -	Daughter of George Edward Lambert, labourer.	Erysipelas, certified by W. Guy, M.D.	F. S. Lambert, mother, present at death, Queen Caroline-yard, Norwich.	28 June 1882	H. Turner, Registrar.

I certify that the above-written is a true Copy of an Entry in the Register Book of Deaths in the District of *Coslany*, Norwich.
Dated this 22nd day of August 1882.

H. Turner, Registrar.
22/8/82.

BOOK, No. 30, Page 42.

1882. DEATHS in the District of *Coslany*, in the City and County of the City of *Norwich*.

No.	When Died and Where.	Name and Surname.	Sex.	Age.	Rank or Profession.	Cause of Death.	Signature, Description, and Residence of Informant.	When Registered.	Signature of Registrar.
210	4 July 1882 - Waterloo - road, Clement, U.S.D.	Maudie Colison	Female	Five Months -	Daughter of George Colison, labourer.	Brnchitis, six days, certified by W. Guy, M.D.	× The mark of Lucy Colison, mother, present at death, Waterloo-road, Norwich.	5 July 1882 -	H. Turner, Registrar.

I certify that the above-written is a true Copy of an Entry in the Register Book of Deaths in the District of *Coslany*, Norwich.
Dated this 22nd day of August 1882.

H. Turner, Registrar.
22/8/82.

BOOK, No. 30, Page 45.

1882. DEATHS in the District of *Coslany*, in the City and County of the City of *Norwich*.

No.	When Died and Where.	Name and Surname.	Sex.	Age.	Rank or Profession.	Cause of Death.	Signature, Description, and Residence of Informant.	When Registered.	Signature of Registrar.
221	25 July 1882 Baldwin's-yard, St. Martin-at-Oak, U.S.D.	Robert Balls	Male	Six months -	Son of Robert Balls, fruiterer.	Infantile syphilis. Marasmus, certified by C. W. Doyle, M.B.	E. Balls, mother, present at death, Baldwin's-yard, Norwich.	25 July 1882	H. Turner, Registrar.

I certify that the above-written is a true Copy of an Entry in the Register Book of Deaths in the District of *Coslany*, Norwich.
Dated this 22nd day of August 1882.

H. Turner, Registrar.
22/8/82.

No. 5.

EXTRACT from the PUBLIC VACCINATOR'S REGISTER of the Norwich Union,

1. Number of Case, consecutive to 500, and then to be repeated.	2. Day of the Month.	3. N A M E.	4. In case of Re-vaccination of Adults and Adolescents successfully vaccinated in Early Life, Mark R.	5. Age.		6. Place of Residence.	7. Where Vaccinated.*	
				Years.	Months.			
	1882 :							
39	6 June	- Cadywold, Caroline -	-	-	3	Oak-street, Oak	-	1
40	6 "	- Calver, Lily -	-	-	4	Oak-street, Oak	-	2
41	6 "	- LAMBERT, ALICE	-	-	4	Caroline-yard, Oak	-	3
42	6 "	- Poll, James -	-	-	2	White Entry, Bull Close	-	4
43	6 "	- Curtis, Frederick	-	-	6	Mill Hill, Catton	-	5
44	6 "	- Armes, Percy -	-	-	4	Back-row, Spitalfields	-	6
45	6 "	- Wicks, Ellen -	-	-	3	No. 16, Compass - street, Etheldred.	-	7
46	6 "	- Stone, Edgar -	-	-	3	Horns-lane, Sepulchre	-	8
47	6 "	- Cooper, Orlando	-	-	3	Chickering-yard, Clement	-	9
48	6 "	- Tidd, Ann E. -	-	-	4	Unicorn-yard, Mary	-	10
49	6 "	- Sadd, Frederick	-	-	4	Eagle-yard, Heigham	-	11
50	6 "	- Heyhoe, William	-	-	3	Little Bull Close	-	12
51	6 "	- Davison, Charles	-	-	4	Patteson's-yard, Magdalen- street.	-	13
52	6 "	- Warminger, James	-	-	4	Chapel-yard, Saviour	-	14
53	6 "	- Carter, George	-	-	4	Elephant-yard, Saviour	-	15
54	6 "	- Marriott, Albert	-	-	6	Queen Hungary-yard, Mar- garet.	-	16
55	6 "	- Dickerson, Hannah	-	-	4	Dial-yard, Miles	-	17
56	6 "	- Bulldeath, Ann	-	-	2	Rock's-yard, James	-	18
57	6 "	- Clarke, Alfred	-	-	4	Elm Hill	-	19
58	6 "	- Doggett, Theresa	-	-	9	St. Catherine's Plain	-	20
59	6 "	- Littleboy, Sophia	-	-	5	Wellington-square, Giles	-	21
60	6 "	- Cook, Beatrice	-	-	4	Mansfield's-yard, Stephen	-	22
61	6 "	- Miller, George	-	-	4	Baker's-yard, Waterloo	-	23
62	6 "	- Pearce, William	-	-	4	Hall-road, Lakenham	-	24
63	6 "	- Taylor, William	-	-	4	Bishopgate-street	-	25
64	6 "	- Sword, Alice F.	-	-	2	Mill-street, Lakenham	-	26
65	6 "	- Youngs, Alice	-	-	4	Calvert-street	-	27
66	6 "	- Wright, Frank	-	-	2	Manchester-buildings, Union- place.	-	28
67	13 "	- Reeve, Philip	-	-	5	Russell-street, Heigham	-	29
68	13 "	- Newman, Hannah	-	-	5	Sun-lane, Catton	-	30
69	13 "	- Fowler, Emma	-	-	2	No. 2, Suffolk-street	-	31
70	13 "	- Haylett, Thomas	-	-	3	Portland-place, Lakenham	-	32
71	13 "	- COLLISON, MAUDIE	-	-	3	Baker's-yard, Waterloo	-	33
72	13 "	- Olley, Rosa	-	-	2	Church-alley, Maddermarket	-	34
73	13 "	- Boast, Maud	-	-	3	Ebenezer-terrace, Sussex- street.	-	35
74	13 "	- Smith, Sarah M.	-	-	1	Red Lion-yard, Magdalen- street.	-	36
75	13 "	- White, Laura	-	-	9	Chapel-street, Crooks-place	-	37
76	13 "	- White, Walter	-	-	9	- ditto - ditto	-	38
77	13 "	- Kitson, Henry	-	-	2	Stepping-lane, Mountedgate	-	39
78	13 "	- Gayford, Samuel	-	-	4	Mr. Buttifant, Old Palace- road.	-	40
79	13 "	- Cornish, Anna	-	-	4	Back-lane, Saviour	-	41
80	13 "	- THREADKILL, PERCY.	-	-	5	Saint Swithins-terrace	-	42
81	13 "	- Coan, Herbert	-	-	8	Globe-street, Heigham	-	43
82	13 "	- HARVEY, JACOB	-	-	1	Bull-close, Paul	-	44
83	13 "	- TYLER, EMMA	-	-	4	Union-street, Heigham	-	45
84	13 "	- Watling, Beatrice	-	-	3	Lothian-street	-	46
85	13 "	- WILLSEA, HENRY	-	-	6	Near Crown and Anchor, Middle-street.	-	47
86	13 "	- Frost, Albert	-	-	3	Near Maris's, Catton	-	48
87	13 "	- Loynes, Edwin	-	-	3	Bailey-street, Heigham	-	49
88	13 "	- Cook, Charles	-	-	3	Suffolk-street	-	50
89	13 "	- Rudd, Ernest	-	-	4	Chapel-street, Crookes-place	-	51
90	13 "	- Smith, Wm.	-	-	3	Mariners-lane, Etheldred	-	52
91	13 "	- BROWNE, MAY	-	-	5	Short Queen-street, Heigham	-	53
92	13 "	- GIRLING, LAURA	-	-	5	Waddington street, Heigham	-	54
93	13 "	- Want, Albert	-	-	2	School-yard, Oak-street	-	55
94	13 "	- Vanham, George	-	-	3	Julian-street, Julian	-	56
95	13 "	- Bowthorpe, Chas.	-	-	2	Sun-lane, Catton	-	57
96	13 "	- Riches, Harriet	-	-	4	Mulberry Tree-yard, Bened- dict.	-	58
97	13 "	- Johnson, Edith	-	-	5	Saint Martin's lane	-	59
98	13 "	- Bruce, George	-	-	3	Portland-place, Lakenham	-	60
99	13 "	- Miller, George	-	-	3	Mill-hill, Catton	-	61

* Whether at the Vaccinator's residence, or at an

No 5.

giving Particulars as to CHILDREN Vaccinated during the Month of June 1882.

8. Name or Number in Register of the Subject with whose Lymph the Vaccination is performed ; or insert N. V. E. if the Lymph be sent by the National Vaccine Establishment, or state other source, if any.	9. Initials of Person Performing the Vaccination.	10. When and Where Inspected.*	11. Initials of the Person Inspecting.	12. Results.		13. Date of sending Certificate to the Vaccination Officer.	14. Fee due in respect of each Case of Successful Primary Vaccination.	15. Fee due in respect of each Case of Successful Re- Vaccination.
				Success- ful.	Un- success- ful.			
							s. d.	
28	W. G.	Station, 13 June -	W. G.	S.	-	- -	2 3	—
28	W. G.	" " -	W. G.	S.	-	- -	2 3	—
28	W. G.	" " -	W. G.	S.	-	- -	2 3	—
28	W. G.	" " -	W. G.	S.	-	- -	2 3	—
28	W. G.	" " -	W. G.	S.	-	- -	2 3	—
28	W. G.	" " -	W. G.	S.	-	- -	2 3	—
33	W. G.	" " -	W. G.	S.	-	- -	2 3	—
33	W. G.	" " -	W. G.	S.	-	- -	2 3	—
35	W. G.	" " -	W. G.	S.	-	- -	2 3	—
33	W. G.	" " -	W. G.	S.	-	- -	2 3	—
33	W. G.	" " -	W. G.	S.	-	- -	2 3	—
33	W. G.	" " -	W. G.	S.	-	- -	2 3	—
33	W. G.	" " -	W. G.	S.	-	- -	2 3	—
33	W. G.	" " -	W. G.	S.	-	- -	2 3	—
33	W. G.	" " -	W. G.	S.	-	- -	2 3	—
35	W. G.	" " -	W. G.	S.	-	- -	2 3	—
35	W. G.	" " -	W. G.	S.	-	- -	2 3	—
35	W. G.	" " -	W. G.	S.	-	- -	2 3	—
35	W. G.	" " -	W. G.	S.	-	- -	2 3	—
37	W. G.	" " -	W. G.	S.	-	- -	2 3	—
35	W. G.	" " -	W. G.	S.	-	- -	2 3	—
35	W. G.	" " -	W. G.	S.	-	- -	2 3	—
37	W. G.	" " -	W. G.	S.	-	- -	2 3	—
37	W. G.	" " -	W. G.	S.	-	- -	2 3	—
37	W. G.	" " -	W. G.	S.	-	- -	2 3	—
37	W. G.	" " -	W. G.	S.	-	- -	2 3	—
37	W. G.	" " -	W. G.	S.	-	- -	2 3	—
37	W. G.	" " -	W. G.	S.	-	- -	2 3	—
37	W. G.	" " -	W. G.	S.	-	- -	2 3	—
54	W. G.	" 20 June -	W. G.	S.	-	- -	2 3	—
54	W. G.	" " -	W. G.	S.	-	- -	2 3	—
58	W. G.	" " -	W. G.	S.	-	- -	2 3	—
54	W. G.	" " -	W. G.	S.	-	- -	2 3	—
53	W. G.	" " -	W. G.	S.	-	- -	2 3	—
58	W. G.	" " -	W. G.	S.	-	- -	2 3	—
58	W. G.	" " -	W. G.	S.	-	- -	2 3	—
58	W. G.	" " -	W. G.	S.	-	- -	2 3	—
40	W. G.	" " -	W. G.	S.	-	- -	2 3	—
40	W. G.	" " -	W. G.	S.	-	- -	2 3	—
40	W. G.	" " -	W. G.	S.	-	- -	2 3	—
44	W. G.	" " -	W. G.	S.	-	- -	2 3	—
44	W. G.	" " -	W. G.	S.	-	- -	2 3	—
44	W. G.	" " -	W. G.	S.	-	- -	2 3	—
51	W. G.	" " -	W. G.	S.	-	- -	2 3	—
51	W. G.	" " -	W. G.	S.	-	- -	2 3	—
51	W. G.	" " -	W. G.	S.	-	- -	2 3	—
51	W. G.	" " -	W. G.	S.	-	- -	2 3	—
51	W. G.	" " -	W. G.	S.	-	- -	2 3	—
45	W. G.	" " -	W. G.	S.	-	- -	2 3	—
45	W. G.	" " -	W. G.	S.	-	- -	2 3	—
45	W. G.	" " -	W. G.	S.	-	- -	2 3	—
45	W. G.	" " -	W. G.	S.	-	- -	2 3	—
45	W. G.	" " -	W. G.	S.	-	- -	2 3	—
45	W. G.	" " -	W. G.	S.	-	- -	2 3	—
41	W. G.	" " -	W. G.	S.	-	- -	2 3	—
45	W. G.	" " -	W. G.	S.	-	- -	2 3	—
43	W. G.	" " -	W. G.	S.	-	- -	2 3	—

appointed station (and, if so, which), or where else.

No. 5.—EXTRACT from the Public Vaccinator's Register of the Norwich Union,

1. Number of Case, consecutive to 500, and then to be repeated.	2. Day of the Month.	3. NAME.	4. In case of Re-vaccination of Adults and Adolescents successfully Vaccinated in Early Life, Mark R.	5. Age.		6. Place of Residence.	7. Where Vaccinated. *
				Years.	Months.		
	1882 :						
100	20 June	Wilson, Joseph	-	-	1	2	Three King lane
101	20 "	Wells, Mary Ann	-	-	-	5	Grimes-yard, Saviour
102	20 "	Butler, Albert	-	-	-	6	Stone Masons-yard, Colegate
103	20 "	Land, Frederick	-	-	-	3	Mancroft-yard, Peters
104	20 "	Byles, Robert N.	-	-	1	6	Grouts Thoroughfare
105	20 "	Golder, Gertrude	-	-	-	3	Turners-square, Rose-lane
106	20 "	Newman, Lily	-	-	-	5	Thorn-lane
107	20 "	Shimmons, Nellie	-	-	-	5	Clarence Harbour-road
108	20 "	Allen, Lily S.	-	-	-	3	Wellington-lane, Giles
109	20 "	Smith, Rosanna	-	-	-	2	Bakers' yard, Pockthorpe
110	20 "	Loomer, Maud	-	-	-	3	Horns-lane, Julian
111	20 "	Nobbs, Alice	-	-	-	1	Fox and Goose-yard, Oak
112	20 "	Rise, William	-	-	-	3	Church-lane, Catton
113	20 "	Smith, Sidney	-	-	-	5	Philadelphia-lane
114	20 "	Browne, Florence	-	-	-	5	West Pottergate-street
115	20 "	Seaman, Wm. Jno.	-	-	-	4	Saint Swithin's-alley
116	20 "	Thompson, Arthur	-	-	-	4	Sussex-street
117	20 "	Howard, Samuel	-	-	-	5	Mill lane, Catton
118	20 "	Eastick, Fredk.	-	-	-	4	- ditto
119	20 "	Grint, Anne	-	-	-	5	Wellington-lane, Giles
120	20 "	Spauls, Sarah	-	-	-	4	Saint James' Palace
121	20 "	Nichols, Emily	-	-	-	2	Ratcatcher's-yard, Thom
122	20 "	Norton, Maud	-	-	-	2	- ditto - ditto
123	20 "	Brett, John	-	-	-	3	Stone's Buildings, New Catton.
124	20 "	Houghton, Charles	-	-	-	5	Sardinian-court, Stephen
125	20 "	Barker, Rose	-	-	-	5	Palace-street
126	20 "	Chettleburgh, Geo.	-	-	-	3	Swithin's-terrace
127	20 "	Franklin, John	-	-	1	3	Heigham-street
128	20 "	Barker, Ada	-	-	-	1	Philadelphia-lane
129	20 "	Smith, Harry	-	-	-	4	Quay-side
130	20 "	Paston, Alfred	-	-	-	3	Pig-lane
131	20 "	Pottle, Ethel	-	-	-	4	Trafalgar Back-street
132	20 "	Black, Alfred	-	-	-	1	Row, No. 13
133	20 "	Kent, William	-	-	-	3	The Fleece, Edmund
134	27 June	Woods, Elcanor	-	-	-	4	Sun-lane, Catton
135	27 "	Bell, Madeline	-	-	-	6	Philadelphia-lane
136	27 "	Watchman, Samuel	-	-	-	3	No. 15, Cowgate-street
137	27 "	Webb, Horace	-	-	-	4	No. 3, Back-lane, Paul
138	27 "	Fuller, John	-	-	-	6	Lower Hildesdon-road
139	27 "	Hipper, Alfred Geo.	-	-	-	6	No. 23, Connaught-road
140	27 "	Carter, Albert	-	-	-	1	Church-alley, Colegate
141	27 "	Burrell, May	-	-	-	2	Burrell's-yard, Colegate
142	27 "	Wellam, Floric	-	-	-	5	Mrs. Miles, No. 4, Vauxhall- street.
143	27 "	Wallbank, Agnes	-	-	-	6	No. 2, Lady-lane
144	27 "	Slaughter, George	-	-	-	8	Stonemason's-yard
145	27 "	Burrell, Sophia	-	-	-	5	Armes-street, Heigham
146	27 "	Nudd, Florence	-	-	-	3	William-street, Horn's-lane
147	27 "	Simpson, Alice	-	-	-	3	Short Queen-street, Heigham
148	27 "	Smith, Edith	-	-	-	5	Mason's-yard, Ber-street
149	27 "	Wickham, Louisa	-	-	-	3	Near Villa-gardens, Laken- ham.
150	27 "	Secker, Rebecca	-	-	-	5	Blacksmith's - yard, Ber- street.
151	27 "	Hewitt, William	-	-	-	1	Mancroft-yard, Peter
152	27 "	Gostling, Beatrice	-	-	-	2	No. 56, Pottergate-street
153	27 "	WORRELL, CLARA	-	-	-	2	Grapes-hill
154	27 "	Clarke, Benjamin	-	-	-	6	Cannell's-court, Louilibill
155	27 "	Goss, Charles	-	-	-	3	Nerobiphis-yard, Mary
156	27 "	Lake, Leod	-	-	-	4	Rose Villa, Unthanks-road
157	27 "	Naven, Hannah	-	-	-	5	No. 9, Napier-street
158	27 "	Flood, John	-	-	-	3	Lamb-yard, Ber-street

* Whether at the Vaccinator's residence, or at an

giving Particulars as to Children Vaccinated during the Month of June 1882—*continued*.

8. Name or Number in Register of the Subject with whose Lymph the Vaccination is performed; or insert N. V. E. if the Lymph be sent by the National Vaccine Establishment, or state other source, if any.	9. Initials of Person Performing the Vaccination.	10. When and where Inspected.*	11. Initials of the Person Inspecting.	12. Results.		13. Date of sending Certificate to the Vaccination Officer.	14. Fee due in respect of each Case of Successful Primary Vaccination.	15. Fee due in respect of each Case of Successful Re- Vaccination.
				Success- ful.	Un- success- ful.			
							<i>s. d.</i>	
65	W. G.	Station, 27 June -	W. G.	S.	-	-	2 3	—
72	W. G.	" " -	W. G.	S.	-	-	2 3	—
68	W. G.	" " -	W. G.	S.	-	-	2 3	—
68	W. G.	" " -	W. G.	S.	-	-	2 3	—
71	W. G.	" " -	W. G.	S.	-	-	2 3	—
68	W. G.	" " -	W. G.	S.	-	-	2 3	—
68	W. G.	" " -	W. G.	S.	-	-	2 3	—
68	W. G.	" " -	W. G.	S.	-	-	2 3	—
69	W. G.	" " -	W. G.	S.	-	-	2 3	—
69	W. G.	" " -	W. G.	S.	-	-	2 3	—
69	W. G.	" " -	W. G.	S.	-	-	2 3	—
69	W. G.	" " -	W. G.	S.	-	-	2 3	—
74	W. G.	" " -	W. G.	S.	-	-	2 3	—
69	W. G.	" " -	W. G.	S.	-	-	2 3	—
84	W. G.	" " -	W. G.	S.	-	-	2 3	—
84	W. G.	" " -	W. G.	S.	-	-	2 3	—
84	W. G.	" " -	W. G.	S.	-	-	2 3	—
88	W. G.	" " -	W. G.	S.	-	-	2 3	—
88	W. G.	" " -	W. G.	S.	-	-	2 3	—
88	W. G.	" " -	W. G.	S.	-	-	2 3	—
89	W. G.	" " -	W. G.	S.	-	-	2 3	—
88	W. G.	" " -	W. G.	S.	-	-	2 3	—
88	W. G.	" " -	W. G.	S.	-	-	2 3	—
86	W. G.	" " -	W. G.	S.	-	-	2 3	—
88	W. G.	" " -	W. G.	S.	-	-	2 3	—
-	-	Postponed.	-	-	-	-	-	-
88	W. G.	Station, 27 June -	W. G.	S.	-	-	2 3	—
88	W. G.	" " -	W. G.	S.	-	-	2 3	—
69	W. G.	" " -	W. G.	S.	-	-	2 3	—
88	W. G.	" " -	W. G.	S.	-	-	2 3	—
69	W. G.	" " -	W. G.	S.	-	-	2 3	—
93	W. G.	" " -	W. G.	S.	-	-	2 3	—
93	W. G.	" " -	W. G.	S.	-	-	2 3	—
93	W. G.	" " -	W. G.	S.	-	-	2 3	—
G. C. L.	W. G.	" 4 July -	W. G.	-	U.	-	-	—
G. C. L.	W. G.	" " -	W. G.	S.	-	-	2 3	—
G. C. L.	W. G.	" " -	W. G.	-	U.	-	-	—
G. C. L.	W. G.	" " -	W. G.	-	U.	-	-	—
G. C. L.	W. G.	" " -	W. G.	-	U.	-	-	—
108	W. G.	" " -	W. G.	S.	-	-	2 3	—
-	-	Not done.	-	-	-	-	-	-
108	W. G.	Station, 4 July -	W. G.	S.	-	-	2 3	—
108	W. G.	" " -	W. G.	S.	-	-	2 3	—
105	W. G.	" " -	W. G.	S.	-	-	2 3	—
105	W. G.	" " -	W. G.	S.	-	-	2 3	—
110	W. G.	" " -	W. G.	S.	-	-	2 3	—
105	W. G.	" " -	W. G.	-	U.	-	-	—
109	W. G.	" " -	W. G.	S.	-	-	2 3	—
G. C. L.	W. G.	" " -	W. G.	-	U.	-	-	—
103	W. G.	" " -	W. G.	S.	-	-	2 3	—
103	W. G.	" " -	W. G.	S.	-	-	2 3	—
106	W. G.	" " -	W. G.	S.	-	-	2 3	—
106	W. G.	" " -	W. G.	S.	-	-	2 3	—
G. C. L.	W. G.	" " -	W. G.	S.	-	-	2 3	—
106	W. G.	" " -	W. G.	S.	-	-	2 3	—
108	W. G.	" " -	W. G.	S.	-	-	2 3	—
109	W. G.	" " -	W. G.	S.	-	-	2 3	—
124	W. G.	" " -	W. G.	S.	-	-	2 3	—

appointed station (and if so, which), or where else.

No. 6.

DR. KLEIN'S REPORT.

RECEIVED from Dr. Thorne Thorne on 31st August 1882, one small bottle containing about half a tea spoon of eastor oil, labelled, "Bottle that contained eastor oil applied to arm of Perey Threadkill on 13th June 1882.

H. A., 27 August 1882."

This castor oil contained several transparent, smaller and larger flakes, which, examined under the microscope, proved to consist of:—

(*a.*) Numbers of thicker and thinner mycelial threads, crossing in various directions, and thus forming a felt work; the threads looked like the mycelial threads of penicillium.

(*b.*) Numbers of torula.

(*c.*) A few hyphæ of aspergillus.

(*d.*) A few bacilli. (?)

Inoculated with these flakes and adhering oil :

- | | |
|-----------------------------|---|
| (1.) One brown dog, | } On left cornea and subcutaneous tissue of left thigh. |
| (2.) One black-and-tan dog, | |

For comparison I inoculated in both animals a small quantity of pure eastor oil, the right cornea and the skin of right thigh.

(3.) One black and white dog, into the subcutaneous tissue of both thighs.

(4.) One dark rabbit. This animal received of the above flakes a minute quantity into a puncture of left cornea and into the subcutaneous tissue of left thigh, whereas of pure eastor oil it received a minute quantity into the right cornea and the subcutaneous tissue of the right thigh.

(5.) One light rabbit; both cornea and both thighs.

(6.) One guinea-pig; both thighs.

The temperature of all these animals was taken every day from the day of the operation, *i.e.*, 31st August until 7th September, and it was found to have shown but slight variations; at any rate not marked enough to be considered as indicating a pathological condition.

The places of inoculation were at all times found without any marked inflammation, with the exception of dog 2 (black-and-tan); here a somewhat larger flake had been inserted into the subcutaneous tissue, and it had led after 48 hours to the formation of a minute abscess about the size of a small pea; the abscess was opened, and the small wound healed in 24 hours.

All animals were lively at all times, and took their food well.

(signed) *E. Klein.*

No. 7.

TABLE illustrating the CHRONOLOGY of the NORWICH ERYSIPELAS OUTBREAK.

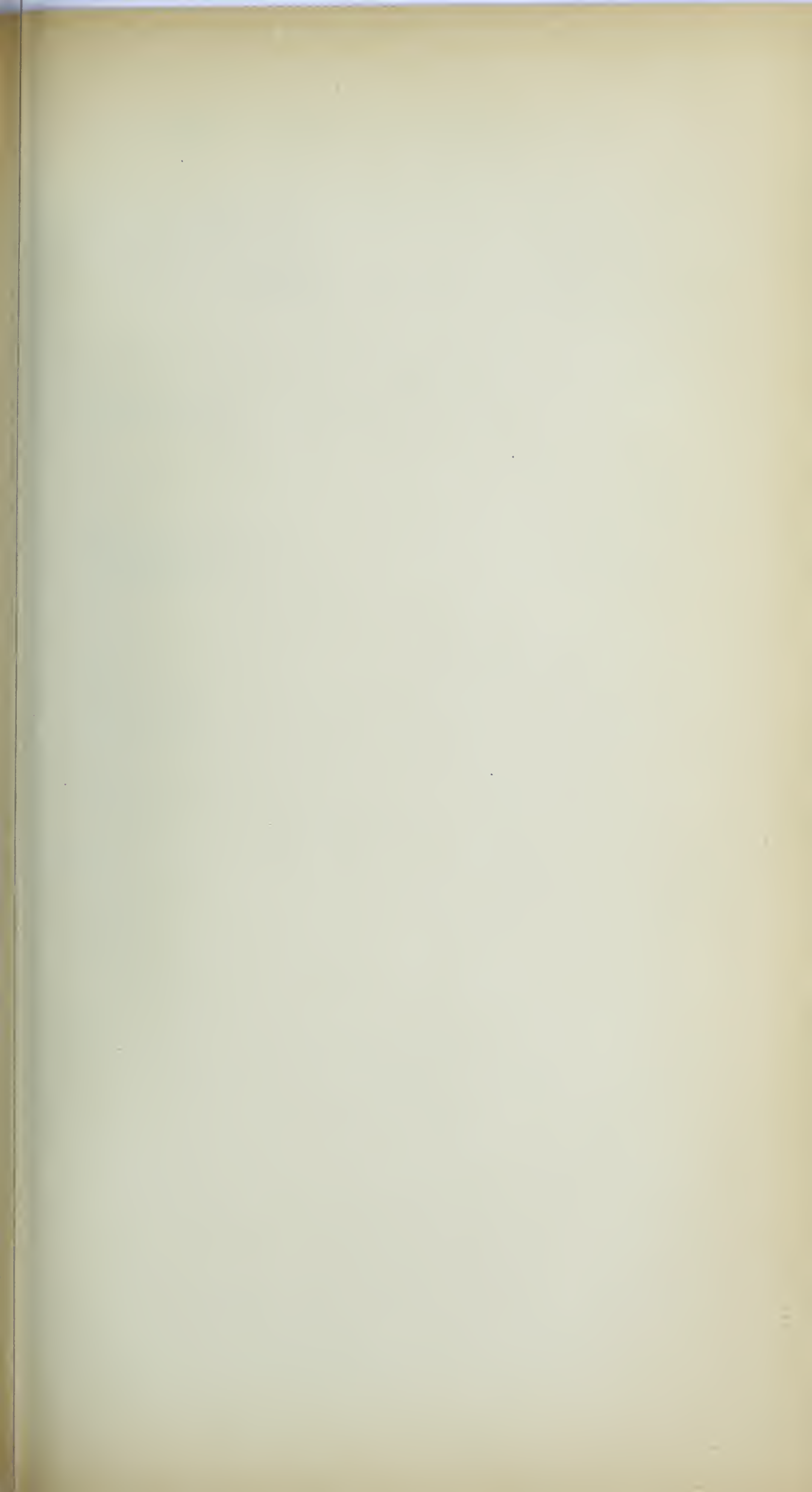
	Tues- day, June 6.	7	8	9	10	11	12	Tues- day, June 13.	14	15	16	17	18	19	Tuesday, June 20.	21	22	23	24	25	26	Tues- day, June 27.	28	29	30	July 1	2	3	Tuesday, July 4.	5	6	7	8	9
1. Threadkill -	-	-	-	-	-	-	-	V.	Ill	-	-	-	-	-	-	-	-	-	-	D.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Tyler -	-	-	-	-	-	-	-	V.	Ill	(Unsuccessful)	-	-	-	-	-	-	-	-	-	-	D.	-	-	-	-	-	-	-	-	-	-	-	-	-
3. Lambert -	V.	-	-	-	-	-	-	L.	Ill	-	-	-	-	-	-	-	-	-	-	-	D.	-	-	-	-	-	-	-	-	-	-	-	-	-
4. Colison -	-	-	-	-	-	-	-	V.	-	-	-	-	-	-	L.	Ill	-	-	-	-	-	-	-	-	-	-	-	-	D.	-	-	-	-	-
5. Harvey -	-	-	-	-	-	-	-	V.	(Unsuccessful)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. Brown -	-	-	-	-	-	-	-	V.	-	-	-	-	-	-	L.	-	-	-	-	-	-	Ill	-	-	-	-	-	-	Present at Sta- tion.	-	-	-	-	-
7. Girling -	-	-	-	-	-	-	-	V.	Poorly	-	Ill	-	-	-	Present at Sta- tion.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8. Willsea -	-	-	-	-	-	-	-	V.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9. Worrell -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Ill	-	-	-	-	-	V.	-	-	-	-	-	-	-	-	-	-	-	Ill

V. Vaccinated. L. Lymph taken. D. Death.

No. 8.

TABLE showing Steps of LYMPH DERIVATION in the NORWICH VACCINATION CASES.

27th June.	20th June.	13th June.	6th June.	30th May.	23rd May.	16th May.
		(A.) THREADKILL (80) { Vaccinated from }	Armes (44) -	{ Vaccinated from } Sewell (28) -	{ Vaccinated from } Tooke (17) -	{ Vaccinated from } Beales (472).
		(B.) TYLER (83) -	" Armes (44) -	" Sewell (28) -	" Tooke (17) -	" Beales (472).
		Johnson (97) -	" (C.) LAMBERT (41) -	" Sewell (28) -	" Tooke (17) -	" Beales (472).
		{ Vaccinated from } (D.) COLISON (71)	" Marriott (54) -	" Franklin (35) -	" Haney (21) -	" Beales (472).
	Byles (104) -	(E.) HARVEY (82) -	" Armes (44) -	" Sewell (28) -	" Tooke (17) -	" Beales (472).
		(F.) BROWN (91) -	" Wicks (45) -	" Impson (33) -	" Tooke (17) -	" Beales (472).
		(G.) GIRLING (92) -	" Wicks (45) -	" Impson (33) -	" Tooke (17) -	" Beales (472).
		(H.) WILLSEA (85) -	" Davison (51) -	" Impson (33) -	" Tooke (17) -	" Beales (472).
		{ Vaccinated from } (I.) WORRELL (159) {	" L. Newman (106) {	" Franklin (35) -	" Haney (21) -	" Beales (472).
			" H. Newman (68) -	" Marriott (54) -	"	"



V A C C I N A T I O N.

COPY of REPORT to the President of the Local
Government Board by the Inspectors Appointed
to Inquire into certain DEATHS and INJURIES
alleged to have been caused by VACCINATION at
Norwich.

(*Mr. Dodson.*)

Ordered, by The House of Commons, to be Printed,
24 October 1882.

[*Price 9 d.*]

385.

H.—15. 11. 82.

Under 6 oz.

NORWICH PUBLIC VACCINATION STATION.

RETURN to an Order of the Honourable The House of Commons,
dated 6 November 1882;—for,

COPY “of MEMORANDUM by the Medical Officer of the Local Government
Board on the probable Origin of ERYSIPELAS at the NORWICH PUBLIC
VACCINATION STATION in June 1882.”

Local Government Board, }
6 November 1882. }

HUGH OWEN,
Assistant Secretary.

(*Mr. Dodson.*)

Ordered, by The House of Commons, to be Printed,
6 November 1882.

MEMORANDUM, by the Medical Officer of the Board, on the probable Origin of Erysipelas at the NORWICH PUBLIC VACCINATION STATION, in June 1882.

THE PRESIDENT,

IT has become my duty, as Medical Officer of the Board, to comment on the occurrences at the Norwich Vaccination Station last June, with especial reference to the causation of erysipelas there, and to the precautions that may be taken for avoiding such disasters in future.

Dr. Airy, in the inquiry which the Board entrusted to him on 11th July, found himself unable to establish the origin of the erysipelatous disease which he found to have attacked eight children attending the station; and he proposed to add to his usual methods of research a public inquiry, at which he might, perhaps, get further information that should throw light on this obscure question of the origin of the disease. It was thought well to give this public inquiry another and more formal character, but the object which Dr. Airy proposed to himself has been in a measure served.

Dr. Airy succeeded at the inquiry in eliciting the very important fact that the vaccination of children at the Norwich Station, nominally performed from arm to arm, has been habitually done by the intervention of "points." This fact had not been discovered by Dr. Airy in his earlier inquiries, and it appears to me to deserve the most particular consideration.

Ivory points are used at Norwich in the transfer of lymph from the arms of children brought for inspection to the arms of children brought for vaccination. The arm of the child to be vaccinated is first punctured or abraded with a lancet, and the point charged with lymph taken from the previously vaccinated child is then rubbed in to the puncture or abrasion. This intervention of points is unnecessary in arm to arm vaccination, but some operators have a liking for it, and except for its introducing a new element, and therefore a new need for care, into the process, there is no objection to it, provided new ivory points are used in every such transfer of lymph. But a wholly different question arises if such ivory points are used over and over again.

The mere washing of points that have been charged with an albuminous matter will not invariably remove the whole of such matter from the end of the point; and, as a further precaution, the washed end of the point may be rubbed on sand paper. But there must inevitably be particular occasions when, even in the hands of a habitually careful person, some portion of the cleansing processes will be overlooked or incompletely performed. The only safe rule in vaccination, therefore, is to consider an ivory point as a mere waste thing only fit to be destroyed, after it has once been charged with vaccine lymph and put to its intended purpose. Unless this rule be observed, the destination of the dirty or imperfectly cleaned ivory point is to be used again on some future occasion. It will have been a simple affair of accident whether the animal matter remaining by chance on its end has been kept dry and harmless, or whether it has undergone decay and obtained the qualities of a septic poison.

The occasion on which an imperfectly cleansed point will be used, and on which it will, if its old retained lymph have become decomposed, do mischief to the child to whom it is used in the operation of vaccination, must, in the nature of things, be difficult of detection, and very close and detailed examination of all the circumstances will be wanted before the fact of its use on a given occasion can be discovered.

Dr. Airy, until the public sitting, was unaware of Dr. Guy's continued practice of using points in the transfer of lymph from arm to arm; he had believed that Dr. Guy had, in deference to previous objections made by himself as the Board's inspector, abandoned the practice; and, indeed, Dr. Guy, while operating in the course of Dr. Airy's last inspection, and in Dr. Airy's presence, had used his lancet, and not any point, in the process of transferring lymph.

In this way it has come about that very imperfect investigation has been made of the relation existing between Dr. Guy's practice of using the same points over and over again, and the occurrence of erysipelas at the Norwich Station in June. At the public inquiry counsel were engaged in accusing vaccination as such, and in defending Dr. Guy from any charge of neglect of duty. They were not there to discover possible accidents incidental to faulty practices of Dr. Guy's. And after the public inquiry, the question, which is so difficult, whether on certain occasions dirty or imperfectly cleaned points were made use of, has not been further gone into. Yet, without investigation of this question, it is certain that the Board is without information of the facts concerning one potent condition out of those which may have produced erysipelas at the Norwich Station.

Dr. Airy, in his report, made jointly with Mr. Henley, on the results of the public inquiry, recognises the probable importance to the question of causation involved in Dr. Guy's practice with ivory points. The inspectors having reported that "no charge was brought against" Dr. Guy in respect of carefulness or skill in the performance of duty, go on to reprehend the practice of using points over and over again; saying, "though it was stated that the same points were not used twice in the same day, and that after every day's using they were carefully cleansed, yet it is evident that some risk of septic contamination attaches to the practice."

But

But there is much more than this to be said concerning the share that transfer points, repeatedly used, may have had in the misfortunes of the Norwich Station.

The cases of erysipelas occurring there in the practice of June last divide themselves into four, which are referable to 13th June; and four others (including one spoken of alternatively as erythema) referable to 20th June, or later. In the four former cases the erysipelas began, without exception, on the vaccinated arm, and it commenced immediately after the operation. Of the four latter cases, the three that were definite erysipelas got the disease commencing at another part of the body, and all four cases got it a week or more after the operation (the erythematous case commencing after rupture of the vesicles); the four latter, moreover, all had the opportunity of contracting the disease from infected persons actually in attendance along with them at the time and place where they received infection. Viewed in connection with the materials of vaccination, therefore, comparatively little importance can attach to the four later cases, and essential interest must attach to the four earlier cases only.

These four more important earlier cases were four children who came under operation in the second half of the sitting on 13th June. Three of the four were infected on the occasion of their vaccination, one on the occasion of taking lymph from it. The last (Lambert) gave no erysipelas to the child who was vaccinated from it, and Lambert's five fellow vaccinees had no erysipelas. The three infected on the occasion of their vaccination were vaccinated from two vaccinifers. Two of them, Threadkill and Tyler, were operated on from one vaccinifer, Percy Armes, along with two other children in whom no erysipelas was produced; and the third, Girling, was operated on from another vaccinifer, Wicks, along with five other children in whom no erysipelas was produced, and along with a sixth who did indeed contract erysipelas, but in whose case the disease probably dated from a later day.

According to the customary practice of medical inspectors, the distribution of disease would be studied for the light that the distribution could throw upon an obscure cause. Those four cases that are definitely referable to the events of the station on 13th June would particularly deserve to be interrogated for the discovery of some agent having a distribution corresponding to the cases; an agent, namely, that (1) had done its principal mischief at that one sitting, and that had come into operation in the middle of the sitting; that (2) could act independently on vaccinifer or vaccinee, but with a preference for the latter; that (3) could convey vaccinia and erysipelas together, or (always remembering the ability of one infection to supersede another) could convey erysipelas alone; that (4) could produce its effects upon children vaccinated from several vaccinifers; while (5) it could affect one or two only out of several children vaccinated from the same vaccinifer.

It is here that the detection made at the public inquiry of the repeated use of washed points comes to have its serious importance. Until this fact was elicited, there was no act or thing, having the same distribution as the cases of disease, that had been discovered. But now it is seen that septic matter may have been carried upon certain individual points and inserted unawares into the arms of certain individual children, producing erysipelas in those children and in no others. All that is required to account for occurrences that had previously been unintelligible is to believe that in the middle of the sitting on 13th June, a group of imperfectly cleaned ivory points came into use; that two of these were used to take lymph from Percy Armes, and were rubbed into the punctures on Threadkill and Tyler; that a third was used to take lymph from Lambert, and was rubbed into Lambert's arm; and a fourth to take lymph from Wicks to Girling, and was rubbed into the punctures on Girling's arm. This is literally all that is needful to account for the whole of the peculiarly obscure occurrences of 13th June.

The inspectors in their joint report, after recognising the importance of their new observation, go on to give reasons why they do not think the children of 13th June got their erysipelas in this way. But, in their reasons, they appear to overlook the consideration which forms the principal ground on which the agency of transfer points claims to be regarded, viz., the independence of each single ivory point, its separate use, and its separate liability to be harmless or harmful. Their difficulties pass away with a little reflection.

1. They do not see how the child Percy Armes, who supplied lymph for the vaccination of four children, could himself have escaped injury from infective points applied so many times to his opened vesicles, while two out of the four children vaccinated with those points caught malignant erysipelas. The lymph of the child Armes, however, was a feeble lymph, failing to produce vaccinia in three out of the four children vaccinated with it; and feeble lymph is habitually copious. The taking of amply flowing lymph on two infected points is hardly likely to have been of any harm to the vaccinifer, though it injured the two children who had the points rubbed into the punctures or scratches on their arms.

2. The inspectors do not see how it could happen that the child Lambert should be infected in the act of taking its lymph, while the child Johnson vaccinated from it escaped. There is a discrepancy about the statement of the number of children vaccinated from Lambert. The mother says three, the register says one. Perhaps points were charged, as well as Johnson vaccinated; but the fact does not seem to have been ascertained. A clean point used to transfer lymph from Lambert to Johnson would not have given erysipelas to either of them. But an infective point afterwards used to take lymph from Lambert for the purpose of storage or of use

elsewhere,

MEMORANDUM RELATING TO

elsewhere, and applied to Lambert's vesicles of no remarkable yield, might readily have injured Lambert. Inquiry does not appear to have been made about the subsequent use of any lymph taken from Lambert after the vaccination of Johnson, and the facts are important to be known.

3. The inspectors do not see how it could happen that Girling should be infected, while Wicks, the vaccinifer, escaped. So far as the escape of the vaccinifer is concerned, the case of Wicks resembles that of Armes. An infective particle upon a point used in the transfer of lymph may find its opportunity of mischief on the one or other child, though the vaccinifer must needs incur less risk than the vaccinee, into whose punctures the infective point is deliberately rubbed to get off adherent material.

The reasons alleged by Mr. Henley and Dr. Airy for not regarding the ivory points as the probable cause of mischief would have application enough if one were to consider each ivory point as just the same with its fellow in its qualities and in its mode of use. But it is the very liability (incidental to the repeated use of points) of one point to differ from another in essential conditions that allows the employment of particular points to have been parallel to the occurrence of particular erysipelas. In the present case the two things have been parallel in a way that no other things are parallel.*

I do not profess to indicate the whole of the directions which might have been taken by inquiry proceeding, as I should have wished it to do, upon the recognition of Dr. Guy's practice of using old points; but I am sure it would have been well, among other things that might have been more difficult, to impound every ivory point in Dr. Guy's possession, and to examine each one of them (with distinction of what he indicated as having once been used) for evidence of that cleansing which he said he always gave to points after using, and for traces of foreign matter remaining on the surface of any point, and to put any such foreign matter to chemical and microscopical test. Of course it would not have been possible to recover particular points as they were used in the vaccination of particular children on 13th June, yet there would have been, none the less, a significance in knowing the ordinary condition of points as employed by Dr. Guy and in examining the evidences of his habitual care. Dr. Airy, however, did not succeed in ascertaining the fact of points being used until the public inquiry, and it would seem that that inquiry has superseded the ordinary methods of investigation of the medical department. Dr. Airy was then concerned with Mr. Henley in investigating a "complaint," and he did not return to study of the means by which the children may have got their erysipelas.

I may usefully add to this Memorandum what I know concerning the liability of points, used as Dr. Guy uses them, to retain foreign matters at their ends. Taking ivory points charged with a minute quantity of a chemical substance (choosing one that is easy of recognition and that does not act on the ivory) to represent a chance foreign material remaining upon the point in practice, I observe one kind of ivory to differ much from another in the facility with which the substance can be removed by dissolving and wiping, and that one differs much from the other in the facility with which solid particles can be removed from the surface by rubbing or scraping.

Hence, in the case of a point which has been used in vaccination, the removal of the last trace of animal matter is probably not an easy business. Imperfect removal of such matter must needs, unless attention is specially paid to dryness, result in the decomposition of it, and that decomposition will produce a putrid material capable of producing disease in a child who has the point moistened (with vaccine or anything else) and rubbed into its arm.

Having this experience of the difficulty of completely removing all foreign matter from an ivory point, I further think it right to record what I know of Dr. Guy's habits of care over matters of the sort. At inspection of his vaccination work in 1876, it was found to be good in some respects, but Dr. Airy did not recommend him for award, owing to his use of dirty instruments in the processes of vaccination. Dr. Airy did not recommend him at the 1878 inspection, by reason of slovenliness in the selection of lymph. Then I find that Dr. Guy at the 1880 inspection, deferring to Dr. Airy's representations and operating in Dr. Airy's presence, avoided the use of any points in the transfer of lymph, and that he has

* To one coincidence indeed the inspectors do direct attention. They show that Percy Armes, who supplied lymph for the vaccination of Threadkill and Tyler who got erysipelas, and of Harvey and Coan who got no erysipelas (Harvey had some eczema in the second week), had not the common potency of vaccine in his lymph, for it produced no vaccine vesicles on Tyler, Harvey, and Coan. It is undoubtedly one coincidence worth observing, for the practice of the Norwich Station shows but rarely instances of failure. And it is indeed worth further examination with reference to the considerations of the text. Feeble lymph is often of peculiar physical characters, such as would be expected to affect the facility with which it could remove matter adherent to an ivory point. But for the rest there is little suggestive in the coincidence between failure and a case of erysipelas. Of the four to whom Armes supplied lymph, the one whose vaccination was successful suffered under disease; two of the three whose vaccination failed did not suffer under it. Then two other children who did get erysipelas on the same occasion had nothing whatever to do with Armes. Armes himself was affected by nothing but regular vaccine at any time. The problem requires something that children vaccinated from Armes had in common with a child vaccinated from Wicks, and having nothing to do with Armes; and in common also with a child who furnished lymph to another, and who also had nothing to do with Armes. The state of Armes personally can have had nothing to do with these other cases.

has subsequently resumed the practice, employing the same point over and over again. I find him, in view of his ostensible amendment, and on the strength of his vaccine scars being of good quality, of the kind that indicate good protection against small-pox, recommended for award from the Parliamentary Grant. But when after this it occurred to the National Vaccine Establishment, in the hope of amplifying their customary store, to invite from Dr. Guy specimens of his lymph, a great majority of his tubes were found to contain blood, and were not sealed; the liquid contained in one tube was not coagulated by heat. The establishment of course declined any dealing with Dr. Guy, and put Dr. Airy in possession of the facts, in preparation for his next inspection of Dr. Guy's station.

I must not allow this Memorandum to close without a suggestion for practical use arising out of the considerations submitted in it. The present instructions to vaccinators under contract direct that if lymph be stored on points, the lymph should be kept dry, the points being constantly well protected from damp, and the instructions further enjoin upon contractors to keep in good condition the instruments which they use in vaccinating. But I propose to add the specific instruction, "Never use an ivory point a second time, either for the conveyance or for the storage of lymph."

4 November 1882.

(signed) *George Buchanan.*

NORWICH PUBLIC VACCINATION
STATION.

COPY of MEMORANDUM by the Medical Officer
of the Local Government Board on the probable
Origin of Erysipelas at the NORWICH PUBLIC
VACCINATION STATION in June 1882.

(*Mr. Dodson.*)

*Ordered, by The House of Commons, to be Printed,
6 November 1882.*

395.

H.—15, 11, 82.

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R E T U R N S.

VACCINATION.

NORWICH PUBLIC VACCINATION STATION.

*Ordered, by The House of Commons, to be Printed,
24 October and 6 November 1882.*
